

Ordinance on Industrial Safety and Health (Appended Tables 2, 5 and 9: as amended up to the Order of the Ministry of Health, Labour and Welfare No. 23 of 2009)

(Order of the Ministry of Labour No. 32 of September 30, 1972)

The Ordinance on Industrial Safety and Health is hereby enacted as follows based on the Industrial Safety and Health Act (Act No. 57 of 1972) and the Enforcement Order of Industrial Safety and Health Act (Cabinet Order No. 318 of 1972) and for the implementation of the Act.

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Part I General Rules

Chapter I General Provisions

(Joint Venture)

Article 1 (1) The appointment of a representative pursuant to the provisions of Article 5, paragraph (1) of the Industrial Safety and Health Act (hereinafter referred to as "the Act") must be made by taking into account the extent of responsibilities in carrying out the work undertaken, such as the person's contribution ratio.

(2) The person who seeks to make a notification pursuant to the provisions of Article 5, paragraph (1) of the Act must submit the notification using Form No. 1 to the Director of the Prefectural Labour Bureau that has jurisdiction over the place where the work pertaining to the notification is carried out, within 14 days before the date on which the work is to commence.

(3) The person who seeks to give a notification pursuant to the provisions of Article 5, paragraph (3) of the Act, without delay after there has been a change in the representative, must submit the notification using Form No. 1 to the Director of the Prefectural Labour Bureau under the preceding paragraph.

(4) The submission of the notification pursuant to the provisions of the preceding two paragraphs is to be made through the Chief of the Labour Standards Inspection Office that has jurisdiction over the place where the work is carried out.

Chapter II System for Safety and Health Management

Section 1 General Safety and Health Supervisor

(Appointment of General Safety and Health Supervisor)

Article 2 (1) The appointment of a general safety and health supervisor pursuant to the provisions of Article 10, paragraph (1) of the Act must be made within 14 days from the date when reasons for appointing a general safety and health supervisor have arisen.

(2) When having appointed a general safety and health supervisor, the employer must submit a report using Form No. 3 without delay to the Chief of the

Labour Standards Inspection Office that has jurisdiction over the place where the workplace is located (hereinafter referred to as the "Chief of the competent Labour Standards Inspection Office").

(Substitute General Safety and Health Manager)

Article 3 When the general safety and health supervisor is unable to execute their duties due to travel, illness, and accident or for any other unavoidable grounds, the employer must appoint a deputy supervisor.

(Work Generally Managed by General Safety and Health Supervisor)

Article 3-2 The work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 10, paragraph (1), item (v) of the Act is as follows:

- (i) matters related to the announcement of a safety and health policy;
- (ii) matters related to the investigation of danger or harm, etc., set forth in Article 28-2, paragraph (1) of the Act, and the measures to be taken based on the results of the investigation; and
- (iii) matters related to the formulation, implementation, evaluation and improvement of a safety and health plan.

Section 2 Safety Officer

(Appointment of a Safety Officer)

Article 4 (1) The appointment of the safety officers pursuant to the provisions of Article 11, paragraph (1) of the Act must be made as prescribed below:

- (i) to appoint a person within 14 days from the date when the grounds necessitating appointment of a safety officer have arisen;
- (ii) to appoint a person who is exclusively assigned to the workplace; provided, however, that this does not apply when two or more safety officers are to be appointed and persons listed in item (ii) of the following Article are included in those safety officers;
- (iii) for the workplace among the chemical facilities (meaning the chemical facilities listed in Article 9-3, item (i) of the Enforcement Order of Industrial Safety and Health Act (hereinafter referred to as the "Order"), the same applies hereinafter), the one such as a reactor, etc., in which the exothermal reaction arises or due to similar abnormal conditions that explosions, fires, etc. is likely to arise (excluding piping; hereinafter referred to as "special chemical facilities") which are designated by the Director of the Prefectural Labour Bureau that has jurisdiction over the workplace (hereinafter referred to as "Director of the competent Prefectural Labour Bureau") (hereinafter referred to as "designated workplaces"), to appoint the necessary number of safety

officers for supervising the technical matters pertaining to safety out of the duties prescribed in each item of Article 10, paragraph (1) at all times during operations for the unit of production facilities designated by the Director the Prefectural Labour Bureau; and

(iv) for the workplace regularly employing the number of workers equal to more than the number listed in the right column of the following Table in accordance with the business type listed in the middle column of the same Table, to appoint at least one person as a fulltime safety officer among those appointed to supervise the technical matters concerning the safety among those works set forth in each item of Article 10, paragraph (1) of the Act; provided, however, that in the business type falling under category 4 of the same Table, this is limited only to the workplace in which there has been a total of more than 100 workers who have died or injured and have taken temporarily absence from work for one day or more due to industrial accidents in the past three years.

1	Construction industry Organic chemical product manufacturing industry Petroleum product manufacturing industry	300
2	Inorganic chemical product manufacturing industry Chemical fertilizer manufacturing industry Road freight transport industry Port transport industry	500
3	Paper and pulp manufacturing industry Iron and steel industry Shipbuilding industry	1000
4	Type of industry prescribed in Article 2, items (i) and (ii) of the Order (excluding types of industry prescribed in row 1 through 3)	2000

(2) The provisions of Article 2, paragraph (2) and Article 3 apply mutatis mutandis to safety officers.

(Qualification of Safety Officers)

Article 5 A person who has the qualifications prescribed by Order of the Ministry of Health, Labour and Welfare set forth in Article 11, paragraph (1) of the Act is as follows:

(i) a person who falls under any of the following categories and who completed a training course specified by the Minister of Health, Labour and Welfare that provides the knowledge necessary to supervise technical matters pertaining to safety among the work listed in each item of Article 10, paragraph (1) of the Act;

(a) a person who has completed and graduated from the long-term course of regular science courses of a university (including a university under the

former University Ordinance (Imperial Ordinance No. 388 of 1918; the same applies hereinafter) or a technical college (including a technical college under the former Professional School Ordinance (Imperial Ordinance No. 61 of 1903); the same applies hereinafter) (including the Human Resource Development and Promotion University (including the Human Resource Development and Promotion University under the Human Resource Development Promotion Act (Act No. 64 of 1969) and Act on Partial Revision of the Employment Promotion Corporation (Act No. 67 of 1992) before amended by the Human Resource Development and Promotion University under the Human Resource Development Promotion Act and Act on Partial Revision of the Employment Promotion Corporation (Act No. 45 of 1997), the same applies hereinafter) and has business experience of having been engaged in the industrial safety service for two years or longer thereafter.

- (b) a person who has completed and graduated from the regular course of science of a senior high school (including a secondary school under the former Secondary School Ordinance (Imperial Ordinance No. 36 of 1943); the same applies hereinafter) or a secondary education school under the School Education Act and has business experience of having been engaged in industrial safety service for four years or longer.
- (ii) industrial safety consultants;
- (iii) in addition to those persons listed in the preceding two items, a person who is specified by the Minister of Health, Labour and Welfare.

(Inspection by the Safety Officer and Grant of Their Authorization)

- Article 6 (1) A safety officer must inspect workshops, etc., and immediately take necessary measures to prevent dangers when there are indications of such dangers in facilities or working methods, etc.
- (2) The employer must grant the safety officer the authority to take measures concerning safety.

Section 3 Health Supervisor

(Appointment of Health Supervisor)

- Article 7 (1) The appointment of health supervisors pursuant to the provisions of Article 12, paragraph (1) of the Act must be made as prescribed below:
- (i) to appoint a person within 14 days from the date when grounds necessitating appointment of a health supervisor have arisen.
 - (ii) to appoint a person who is exclusively assigned to the workplace; provided, however, that this does not apply to one of the persons when two or more health supervisors are appointed and persons listed in Article 10, item (iii)

are included in those health supervisors.

(iii) to appoint persons from among those listed in the following items, in accordance with the category for each business type:

(a) in the industries of agriculture, forestry, livestock raising, fisheries, mining, construction, manufacturing (including processing of things), electric power, gas supply, water supply, heating supply, transport, automobile servicing, machine servicing, medical repairing services, and cleaning: those having the class-1 health supervisor's license, the health supervisor's license on industrial hygiene or those listed in each item of Article 10;

(b) in other business types: those having the class-1 health supervisor's license, the class-2 health supervisor's license, the health officer's license on industrial hygiene or those listed in the items of Article 10;

(iv) to appoint the number of health supervisors equal to or more than the number shown on the right column of the following Table in accordance with the size of each workplace shown on the left column of the same Table.

Size of Workplace (Number of Regular Employees)	Number of Health Supervisors
50 or more and 200 or less	1
More than 200 and 500 or less	2
More than 500 and 1,000 or less	3
More than 1,000 and 2,000 or less	4
More than 2,000 and 3,000 or less	5
More than 3,000	6

(v) for the workplaces falling under the following categories, to appoint at least one full-time health supervisor:

(a) those workplaces regularly employing more than 1,000 workers;

(b) those workplaces regularly employing more than 500 workers, of which 30 or more workers are regularly engaged in underground work or work designated in the items of Article 18 of the Enforcement Order of the Labor Standards Act (Ministry of Health and Welfare Order No. 23 of 1947);

(vi) in those workplaces regularly employing more than 500 workers, of which 30 or more workers are engaged in underground work or work listed in Article 18, item (i), items (iii) to (v) or item (ix) of the Enforcement Order of the Labor Standards Act, to appoint one health supervisor who has obtained a health supervisor's license on industrial hygiene.

(2) The provisions of Article 2, paragraph (2) and Article 3 apply mutatis mutandis to health supervisors.

(Special Provision for the Appointment of Health Supervisors)

Article 8 The employer may not comply with the provisions of paragraph (1) of the preceding Article when there are unavoidable grounds whereby the employer is unable to appoint a health supervisor under that provision and has obtained the permission of the Director of the competent Prefectural Labour Bureau.

(Appointment of a Common Health Supervisor)

Article 9 A Director of the Prefectural Labour Bureau may, when the Director finds it necessary, recommend the appointment of a common health supervisor for the two or more workplaces where the appointment of a health supervisor for one workplace is not necessary and the two or more such workplaces are located in the same area, through deliberation with the Local Labour Council.

(Qualifications of a Health Supervisor)

Article 10 A person who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 12, paragraph (1) of the Act is as follows:

- (i) physician;
- (ii) dentist;
- (iii) industrial health consultant; and
- (iv) in addition to those persons listed in the preceding three items, those specified by the Minister of Health, Labour and Welfare.

(Periodical Inspection by the Health Supervisor and Grant of Their Authorization)

Article 11 (1) The health supervisor must inspect workshops, etc., at least once a week and immediately take necessary measures to prevent the impairment of workers' health when there is a risk of harmful effects due to the design of the facilities, working methods or in health conditions of those workshops.

(2) The employer must grant the health supervisor the authority required to take measures necessary to prevent health impairment.

(Administration of Industrial Health Engineering Matters)

Article 12 The employer must have a health supervisor appointed pursuant to the provisions of Article 7, paragraph (1), item (vi), supervise the work related to industrial health engineering among those technical matters pertaining to industrial health set forth in each item of Article 10, paragraph (1) of the Act.

Section 3-2 Safety and Health Promoter and Health Promoter

(Workplace that Should Appoint Safety and Health Promoters)

Article 12-2 The workplaces with the size prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 12-2, paragraph (2) of the Act are to be those regularly employing 10 or more workers and less than 50 workers.

(Appointment of Safety and Health Promoters)

Article 12-3 The appointment of the safety and health promoter or the health promoter (hereinafter referred to as "safety and health promoter, etc.") pursuant to the provisions of Article 12-2 of the Act is to be made, from among those who are found to have the ability to take charge of the work set forth in each item of Article 10, paragraph (1) of the Act (for the health promoter, limited to the work pertaining to industrial health), as prescribed below:

- (i) to appoint a person within 14 days from the day when the grounds necessitating the appointment of safety and health promoter, etc. have arisen;
- (ii) to appoint a person who is exclusively assigned to the workplace; provided, however, that this does not apply when the person is to be appointed from among the industrial safety consultants, industrial health consultants or other persons who are specified by the Minister of Health, Labour and Welfare.

(Dissemination of Names of Safety and Health Promoters)

Article 12-4 When having appointed a safety and health promoter, etc., the employer must make the name of the safety and health promoter, etc., known to the workers concerned by displaying their names at a readily visible location in the workshop, etc.

Section 4 Industrial Physicians

(Appointment of an Industrial Physician)

Article 13 (1) The appointment of an industrial physician pursuant to the provisions of Article 13, paragraph (1) of the Act must be made as follows:

- (i) to appoint a person within 14 days from the date when grounds necessitating appointment of an industrial physician have arisen.
- (ii) for the workplace where 1,000 workers or more are regularly employed or 500 workers or more workers are regularly engaged in the following work, to appoint a person exclusively assigned to the workplace:
 - (a) work handling a large quantity of high-temperature substances or the work in extremely hot places;
 - (b) work handling a large quantity of low-temperature substances or the work in extremely cold places;

- (c) work in which workers are exposed to radium rays, X-rays and other harmful radiation;
 - (d) work at a place where extreme air-borne dust or powder of soil and stone or animal hair, etc., are flying;
 - (e) work under an extraordinary atmospheric pressure;
 - (f) work exposing the bodies of workers to extreme vibrations due to the use of a rock drill, a riveting machine, etc.
 - (g) heavy work such as handling heavy material;
 - (h) work in places of boiler manufacturing, etc., where there is extremely noise;
 - (i) work in a pit;
 - (j) work that includes midnight work;
 - (k) work handling mercury, arsenic, yellow phosphorus, hydrofluoric acid, hydrochloric acid, nitric acid, sulfuric acid, prussic acid, caustic alkali, carbolic acid and other equivalent substances;
 - (l) work in places exuding gas, vapor, dusts of lead, mercury, chromium, arsenic, yellow phosphorus, hydrogen fluoride, chlorine, hydrochloric acid, nitric acid, sulfurous acid, sulfuric acid, carbon monoxide, carbon disulfide, prussic acid, benzene, aniline and gas, steam or dust of other equivalent toxic substances.
 - (m) work which has a considerable risk of contamination by pathogens; and
 - (n) other work specified by the Minister of Health, Labour and Welfare;
- (iii) for the workplace where more than 3,000 workers are regularly employed, to appoint two or more industrial physicians.
- (2) The provisions of Article 2, paragraph (2) apply mutatis mutandis to industrial physicians; provided, however, that this does not apply to those school physicians who have been appointed or entrusted pursuant to the provisions of Article 16 of the School Health Act (Act No. 56 of 1958) to perform the duties of an industrial physician for the school.
- (3) The provisions of Article 8 apply mutatis mutandis to industrial physicians. In this case, the term "paragraph (1) of the preceding Article" in the same Article is deemed to be replaced with "Article 13, paragraph (1)."

(Duties of the Industrial Physician or Industrial Dentist)

Article 14 (1) The matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 13, paragraph (1) of the Act are to be the following matters that require expert knowledge of medicine:

- (i) matters related to the implementation of medical examinations and face-to-face guidance, etc. (meaning face-to-face guidance prescribed by Article 66-8, paragraph (1) of the Act (hereinafter referred to as "face-to-face guidance") and necessary measures prescribed by Article 66-9 of the Act) and measures

- to be taken based on their results to maintain workers' health;
 - (ii) matters related to the maintenance and control of the working environment;
 - (iii) matters related to control of the work;
 - (iv) beyond what is set forth in the preceding three items, matters related to the health care of the workers;
 - (v) matters related to health education, health counseling and other measures for maintaining and promoting workers' health;
 - (vi) matters related to health education; and
 - (vii) matters related to investigation of the causes of the impairment of workers' health and measures for preventing its recurrence.
- (2) A person who meets the requirements prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 13, paragraph (2) of the Act is as follows:
- (i) a person who has completed a training course specified by the Minister of Health, Labour and Welfare that provides the necessary medical knowledge to carry out health care, etc., for workers, prescribed by Article 13, paragraph (1) of the Act (hereinafter referred to as "health care, etc. for workers").
 - (ii) a person who has completed and graduated from a regular medical course established for the purposes of developing industrial physicians in universities of industrial health or other universities designated by the Minister of Health, Labour and Welfare, and who has completed the practical training specified by the Minister of Health, Labour and Welfare;
 - (iii) a person who has passed the industrial health consultant's examination in the category of health and hygiene;
 - (iv) a person who works or used to work as a professor, associate professor or lecturer (limited to full-time employees) in charge of the subjects related to industrial health at a university under the School Education Act; and
 - (v) in addition to those persons listed in each preceding item, a person who is specified by the Minister of Health, Labour and Welfare.
- (3) An industrial physician may make recommendations to the general safety and health supervisor and give guidance or advice to the health supervisor about the matters specified in each item of paragraph (1).
- (4) The employer may not dismiss or disadvantage the industrial physician by reason of recommendations made by the industrial physician pursuant to the provisions of Article 13, paragraph (3) of the Act or recommendations, guidance or advice given pursuant to the provisions of the preceding paragraph.
- (5) As regards workplaces where 50 workers or more are regularly employed to perform the work set forth in Article 22, paragraph (3) of the Order, the employer must obtain the opinion of the industrial dentist on the condition of workers' teeth or their supporting tissues among the matters listed in each

item of paragraph (1), in a timely manner.

- (6) The industrial dentist who has conducted a medical examination set forth in Article 66, paragraph (3) of the Act on workers who work in workplaces set forth in the preceding paragraph may recommend matters necessary for preventing the impairment of workers' health (limited to health impairment related to teeth and their supporting tissues) to the employer or the general safety and health manager of the workplace.

(Periodical Inspection by Industrial Physician and Grant of Their Authorization)

Article 15 (1) The industrial physician must inspect workshops, etc., at least once a month and immediately take the necessary measures to prevent the impairment of workers' health when there is a risk of harmful effects due to working methods or sanitary conditions of the workshops.

- (2) The employer must grant the industrial physician the authority required to perform the matters prescribed in paragraph (1) of the preceding Article.

(Health Care for Workers in Workplaces Other Than Those Required to Appoint an Industrial Physician)

Article 15-2 (1) A person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 13-2 of the Act is to be a public health nurse who is on the list of persons with the necessary knowledge to conduct health care, etc., to workers for the State to implement as the State's support prescribed in Article 19-3 of the Act by entrusting the implementation to a medical association which is a corporation established pursuant to the provisions of Article 34 of the Civil Code (Act No. 89 of 1896) with physicians in the part of the region of prefectures as its members, consultation, provision of information, and other supportive activities on the work pertaining to health care, etc. to workers (referred to as "regional industrial health center activities" in the following paragraph).

- (2) As regards a workplace other than the workplace under the provisions of Article 13, paragraph (1) of the Act, when having a person prescribed in Article 13-2 of the Act conduct all or a part of the health care, etc. for workers, the employer is to endeavor to appoint a physician prescribed by the same Article who carries out the health care, etc. for workers or to utilize regional industrial health center activities, etc.

Section 5 Operations Chief

(Appointment of an Operations Chief)

Article 16 (1) The appointment of the operations chief pursuant to the provisions

of Article 14 of the Act is to be made from those who have the qualifications listed in the middle column of the Appended Table 1 in accordance with the type of work listed in the left column of the same Table. The names of the respective operations chief are as stated in the right column of the same Table.

(2) As regards work of handling class-1 pressure vessels which are subject to the High Pressure Gas Safety Act (Act No. 204 of 1951), Gas Utility Act (Act No. 51 of 1954) or the Electric Utility Act (Act No. 170 of 1964) among the types of work prescribed in Article 6, item (xvii) of the Order, notwithstanding the provisions of the preceding paragraph, the employer may appoint an operations chief of the work of handling class-1 pressure vessels from among those who have obtained a license for operations chief of the work handling the specified class-1 pressure vessels as provided for by Ordinance on Safety of Boilers and Pressure Vessels (Order of the Ministry of Labour No. 33 of 1972, hereinafter referred to as the "Boiler Ordinance").

(Sharing of Duties by Operations Chiefs)

Article 17 When carrying out a work listed in the right column of the Appended Table 1 at the same place and when having appointed two or more operations chiefs pertaining to the work, the employer must specify the division of their duties.

(Dissemination of the Names of Operations Chiefs)

Article 18 When having appointed the operation chief, the employer must make the name of the operations chief known to the workers concerned by displaying their name at a readily visible location in the workshop, etc.

Section 6 Overall Safety and Health Controller, Principal Safety and Health Supervisor, Site Safety and Health Supervisor, and Safety and Health Controller

(Place prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 7, Paragraph (2), Item (i) of the Order)

Article 18-2 The place prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 7, paragraph (2), item (i) of the Order is to be the place on or in the vicinity of roads, or on or in the vicinity of rail tracks of railways in areas where the population is concentrated.

(Appointment of Principal Safety and Health Supervisor)

Article 18-3 The appointment of the principal safety and health supervisor pursuant to the provisions of Article 15-2, paragraph (1) of the Act must be made by appointing a person who is exclusively assigned to the workplace.

(Qualifications of a Principal Safety and Health Supervisor)

Article 18-4 A person who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 15-2, paragraph (1) of the Act is as follows:

- (i) a person who has completed and graduated from a regular science course of a university or a technical college under the School Education Act and has business experience of having been engaged in the field of safety and health in construction work for three years or longer thereafter.
- (ii) a person who has completed and graduated from a regular science course of a senior high school or a secondary education school under the School Education Act and has business experience of having been engaged in the field of safety and health in construction work for five years or longer thereafter; and
- (iii) in addition to those persons listed in the preceding two items, a person who is specified by the Minister of Health, Labour and Welfare.

(Grant of Authorization)

Article 18-5 The employer must grant the principal safety and health supervisor the authority required to take various necessary measures for preventing industrial accidents which may be caused by the fact that workers and related subcontractor's workers work together at the same place.

(Number of Workers Pertaining to Appointment of a Site Safety and Health Supervisor)

Article 18-6 (1) The number of workers prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 15-3, paragraph (1) and (2) of the Act is to be the number set forth in the following items in accordance with the work category stated in each item:

- (i) work set forth in Article 7, paragraph (2), item (i) of the Order or construction work of buildings where the main structures are steel frames or steel reinforced concrete structures: 20 workers regularly; and
 - (ii) work other than the work under the preceding item: 50 workers regularly.
- (2) An employer carrying out the work related to the construction industry who appoints a person to perform the duty of an overall safety and health controller in the workplace as prescribed by Article 15, paragraph (2) of the Act and has the person carry out the direction and overall supervision set forth in paragraph (1), paragraph (3), and paragraph (4) of the same Article, and also appoints a person to perform the duty of a principal safety and health supervisor from among persons who have the qualifications set forth in Article 15-2, paragraph (1) of the Act and has the person supervise the matters set

forth in the same paragraph (limited to an employer who has the obligation to appoint a site safety and health supervisor pursuant to the provisions of Article 15-3, paragraphs (1) and (2) of the Act) may be regarded as an employer who has appointed a site safety and health supervisor pursuant to the provisions of paragraph (1) or (2) of that Article and has that person carry out the matters set forth in paragraph (1) or (2) of the same Article.

(Qualifications of a Site Safety and Health Supervisor)

Article 18-7 A person who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 15-3, paragraph (1) and (2) of the Act is as follows:

- (i) a person who has graduated from a university or technical college under the School Education Act, and has business experience of having been engaged in the field of safety and health in construction work for three years or longer thereafter;
- (ii) a person who has graduated from a senior high school or a secondary education school under the School Education Act and has business experience of having been engaged in the field of safety and health in construction work for five years or longer thereafter;
- (iii) a person who has business experience of having been engaged in the field of safety and health in construction work for eight years or longer; and
- (iv) in addition to those persons listed in preceding three items, a person who is specified by the Minister of Health, Labour and Welfare.

(Duties of the Site Safety and Health Supervisor)

Article 18-8 Matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 15-3, paragraph (1) and (2) of the Act are as follows:

- (i) to inspect the place where a worker carrying out the work as provided for in Article 15-3, paragraph (1) and (2) of the Act at least once a month;
- (ii) to understand the types or other implementation status of the work carried out by the worker set forth in Article 15-3, paragraph (1) or (2) of the Act;
- (iii) to participate as needed in the meetings of the consultative organizations set forth in Article 30, paragraph (1), item (i) of the Act; and
- (iv) to confirm that the measures set forth in Article 30, paragraph (1), item (v) of the Act pertaining to the plan provided for by the same item are taken.

(Duties of Safety and Health Controller)

Article 19 Matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 16, paragraph (1) of the Act are as follows:

- (i) to liaise with the overall safety and health controller;

- (ii) to liaise with the persons concerned on matters notified by the overall safety and health controller;
- (iii) to supervise the implementation of the matters pertaining to the contractor out of the matters notified by the overall safety and health controller under the preceding item;
- (iv) when the contractor prepares plans related to the implementation of work by the contractor's workers, to coordinate with the overall safety and health controller to ensure consistency with plans prepared under Article 30, paragraph (1), item (v) of the Act by a specified principal employer;
- (v) to check the presence of dangers pertaining to industrial accidents set forth in Article 15, paragraph (1) of the Act that occur due to the work carried out by the contractor's workers and the work carried out by persons other than those workers; and
- (vi) when the contractor contracts out part of the work to another contractor, to liaise and coordinate with the safety and health controller of the other contractor.

(Deputy of the Overall Safety and Health Controllers)

Article 20 The provisions of Article 3 apply mutatis mutandis to the overall safety and health controllers, principal safety and health supervisors, site safety and health supervisors, and safety and health controllers.

Section 7 Safety Committee, Health Committee, and Other Committees

(Matters to Be Discussed by the Safety Committee)

Article 21 The important matters related to the prevention of workers from dangers set forth in Article 17, paragraph (1), item (iii) of the Act are to include the following matters:

- (i) matters related to preparation of rules for industrial safety;
- (ii) matters related to safety in the investigations of danger or harm, etc., set forth in Article 28-2, paragraph (1) of the Act, and in the measures to be taken based on the results of the investigations;
- (iii) matters related to the formulation, implementation, evaluation and improvement of safety and health plans (limited to the parts related to safety);
- (iv) matters related to the formulation of the implementation plan on safety education; and
- (v) matters related to the prevention of dangers of workers out of the matters designated through orders, instructions, recommendations or guidance in writing by the Minister of Health, Labour and Welfare, the Director of the Prefectural Labour Bureau, the Chief of the Labour Standards Inspection

Office, the Labour Standards Inspector, or the Expert Officer on Industrial Safety.

(Matters to Be Discussed by the Health Committee)

Article 22 The important matters related to the prevention of worker health impairment and maintaining and promoting workers' health set forth in Article 18, paragraph (1), item (iv) of the Act are to include the following matters:

- (i) matters related to establishing the rules for health;
- (ii) matters related to health in the investigations of the danger or harm, etc., set forth in Article 28-2, paragraph (1) of the Act, and in the measures to be taken based on the results of the investigations;
- (iii) matters related to the formulation, implementation, evaluation and improvement of safety and health plans (limited to the parts related to health);
- (iv) matters related to the formulation of the implementation plan on health education;
- (v) matters related to the investigation of the harmful effect of the substances conducted pursuant to provisions of Article 57-3, paragraph (1) and Article 57-4, paragraph (1) of the Act and the establishment of countermeasures based on the results of the investigation;
- (vi) matters related to the results of working environment measurement made pursuant to the provisions of Article 65, paragraph (1) or paragraph (5) of the Act and the establishment of countermeasures based on the evaluation of the results;
- (vii) matters related to the results of the periodical medical examinations, temporary medical examinations conducted pursuant to the provisions of Article 66, paragraph (4) of the Act, voluntary medical examination undertaken pursuant the provisions of Article 66-2 of the Act and other medical diagnoses, check-ups and treatments by physicians or surgeons conducted pursuant to the provisions of other ministerial orders based on laws, and the establishment of countermeasures based on the results of the medical examination, diagnosis, checkup or treatment;
- (viii) matters related to formulation of the implementation plan of necessary measures for the maintenance and promotion of the health of workers;
- (ix) matters related to the establishment of countermeasures for preventing the impairment of workers' health that may be caused by long hours of work;
- (x) matters related to the establishment of countermeasures for maintaining and improving workers' mental health; and
- (xi) matters related to the measures for preventing the impairment of workers' health out of the matters designated through orders, instructions, recommendations or guidance in writing by the Minister of Health, Labour

and Welfare, Director of the Prefectural Labour Bureau, Chief of the Labour Standards Inspection Office, the Labour Standards Inspector or the Expert Officer on Industrial Health.

(Meeting of Committees)

Article 23 (1) The employer must hold meetings of the safety committee, health committee or the safety and health committee (hereinafter referred to as "the committee") more than once a month.

(2) Beyond what is set forth in the preceding paragraph, matters necessary for the management of respective committees is decided by the committee concerned.

(3) The employer must notify workers of the outline of the proceedings discussed at each committee meeting by using any of the following methods without delay:

(i) to display or place a notice at a readily visible place in each workshop at all times;

(ii) to issue a written notice for workers; and

(iii) to record the matters on magnetic tapes, magnetic disks or other similar devices, and to install an instrument in each workshop with which workers can confirm the matters at all times.

(4) The employer must make a record pertaining to important agendas discussed at each committee meeting and preserve the record for three years.

(Hearing of Opinions of the Workers Concerned)

Article 23-2 An employer who has not established a committee must endeavor to provide opportunities to hear opinions of the workers concerned on the matters related to safety and health.

Section 8 Publication of Guidelines

Article 24 The publication of the guidelines pursuant to the provisions of Article 19-2, paragraph (2) of the Act is to be made by publishing the title and purport of the guidelines in the official gazette, as well as by offering inspection of the guidelines to the public at the Labour Standards Bureau of the Ministry of Health, Labour and Welfare and the Prefectural Labour Office.

Section 8-2 Guidelines for Promotion of Voluntary Activities

Article 24-2 The Minister of Health, Labour and Welfare may publicize the necessary guidelines to promote the following voluntary activities, to be carried out based on a series of processes determined by the employer for the purpose

of improving the level of workplace safety and health:

- (i) announcement of safety and health policies;
- (ii) investigation of the danger or harm, etc., set forth in Article 28-2, paragraph (1) of the Act, and the measures to be taken based on the results of the investigations;
- (iii) establishment of targets of safety and health; and
- (iv) preparation, implementation, evaluation and improvement of safety and health plans.

Chapter II-2 Measures Related to the Rescue of Workers

(Machines Required for Rescue)

Article 24-3 (1) The employer prescribed in Article 25-2, paragraph (1) of the Act (hereinafter referred to as the "employer" in this Chapter) must provide machines, instruments and other equipment listed in the following items (hereinafter referred to as "machines, etc."); provided, however, that this does not apply to the measuring instruments pertaining to methane or hydrogen sulfide listed in item (ii) below when there is no risk of methane or hydrogen sulfide to be generated:

- (i) air respirators or oxygen respirators (referred to as "air respirators, etc." in paragraph (3));
 - (ii) necessary measuring instruments for measuring the concentration of methane, hydrogen sulfide, carbon monoxide, and oxygen;
 - (iii) flashlights or other portable illumination apparatuses; and
 - (iv) beyond what is set forth in the preceding three items, machines, etc., required for the rescue of workers.
- (2) As regard to the machines, etc., set forth in the preceding paragraph, the employer must provide the machines, etc. in accordance with the classification set forth in the following items by the time listed in each item:
- (i) work listed in Article 9-2, item (i) of the Order: when work is being carried out at a place where a distance from the entrance is 1000 m. or in a vertical shaft (limited to those used for passage) with a depth of 50 m.; and
 - (ii) work listed in Article 9-2, item (ii) of the Order: when work is being carried out by compressed air construction method under a gauge pressure of 0.1 MPa.
- (3) As regard to the machines, etc., set forth in paragraph (1), the employer must maintain the effectiveness of the machines, etc. at all times, and keep the air respirators, etc. clean at all times.

(Training Related to Rescue)

Article 24-4 (1) The employer must conduct training on the matters listed in the

following items:

- (i) matters related to the method of machines, etc., set forth in paragraph (1) of the preceding Article;
 - (ii) matters related to the method of first aid resuscitation and other first aid treatments;
 - (iii) beyond what is set forth in the preceding two items, matters related to the method of safe rescue.
- (2) As regard to the training set forth in the preceding paragraph, the employer must conduct the training in accordance with the classification set forth in each item of paragraph (2) of the preceding Article, once by the time listed in each item, and once every period not exceeding a year thereafter.
- (3) When having conducted the training set forth in paragraph (1), the employer must record the following matters and preserve the records for three years:
- (i) the date of the training conducted;
 - (ii) the name of the person who has undergone the training; and
 - (iii) the details of the training.

(Rules Related to the Safety of Rescue)

Article 24-5 The employer must establish the following matters related to the safety of rescue of workers by the time listed in the following item, in accordance with the classification set forth in each item of Article 24-3, paragraph (2):

- (i) matters related to the rescue organizations;
- (ii) matters related to the inspection and maintenance of machines, etc., required for rescue;
- (iii) matters related to the implementation of the training on rescue; and
- (iv) beyond what is set forth in the preceding three items, matters related to the safety of rescue.

(Confirmation of Personnel)

Article 24-6 The employer must, in accordance with the classification set forth in each item of Article 24-3, paragraph (2) and by the time listed in the items, take measures that enable to confirm at all times the numbers and names of the worker carrying out the work in the work carried out in tunnels, etc. (meaning tunnels and pits other than vertical shafts (excluding those for obtaining rocky materials prescribed in Article 2 of the Quarrying Act (Act No. 291 of 1950)); the same applies hereinafter) or in compressed air chambers (meaning work chambers or shafts having a pressure exceeding the atmospheric pressure owing to the caisson method and other compressed air methods).

(Appointment of Persons Responsible for Managing Technical Matters Related to Rescue)

Article 24-7 (1) The appointment of the person responsible for managing technical matters related to rescue pursuant to the provisions of Article 25-2, paragraph (2) of the Act must be made as prescribed below:

- (i) to appoint a person, in accordance with the classification set forth in each item of Article 24-3, paragraph (2) by the time listed in each item; and
- (ii) to appoint a person who is exclusively assigned at the workplace.

(2) The provisions of Article 3 and 8 apply mutatis mutandis to persons who are responsible for managing technical matters related to rescue. In this case, the term "paragraph (1) of the preceding Article" in the same Article is deemed to be replaced with "Article 24-7, paragraph (1), item (ii) " and the term "the same paragraph" is deemed to be replaced with "the same item."

(Qualifications for Persons Responsible for Managing Technical Matters Related to Rescue)

Article 24-8 A person who has the qualifications prescribed in the Order of the Ministry of Health, Labour and Welfare set forth in Article 25-2, paragraph (2) of the Act is to be the person listed in the following items in accordance with the classification in each item and who has completed the training specified by the Minister of Health, Labour and Welfare:

- (i) work listed in Article 9-2, item (i) of the Order: a person who has experience of having been engaged in the construction of tunnels, etc., for three years or longer; and
- (ii) work listed in Article 9-2, item (ii) of the Order: a person who has experience of having been engaged in conducting operations by the compressed air construction method for three years or longer.

(Grant of Authorization)

Article 24-9 The employer must grant the person who is responsible for managing technical matters related to rescue the authority required to take the necessary measures for the safety of rescue.

Chapter II-3 Publication of Technical Guidelines

Article 24-10 The provisions of Article 24 apply mutatis mutandis to the publication of the technical guidelines or the guidelines for preventing the impairment of workers' health pursuant to the provisions of Article 28, paragraph (1) and (3) of the Act.

Chapter II-4 Investigation of Danger or Harmful Effects

(Investigation of Danger or Harmful Effects)

Article 24-11 (1) Investigation of the danger or harmful effects, etc., set forth in Article 28-2, paragraph (1) of the Act is to be carried out at the following timing:

- (i) when a building is installed, relocated, altered or dismantled;
 - (ii) when equipment or raw material, etc., is newly adopted or changed;
 - (iii) when working methods or working procedures are newly adopted or changed; and
 - (iv) beyond what is set forth in the preceding three items, when a change has occurred or is likely to occur concerning danger or harmful effects, etc., arising from buildings, equipment, raw materials, gas, vapor, dust, etc., and from work actions and other work.
- (2) The type of business prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in the proviso of Article 28-2, paragraph (1) of the Act are to be the type of business listed in Article 2, item (i) and (ii) of the Order (excluding the manufacturing industry).

(Publication of Guidelines)

Article 24-12 The provisions of Article 24 apply mutatis mutandis to the publication of guidelines pursuant to the provisions of Article 28-2, paragraph (2) of the Act.

Chapter III Regulations Concerning Machines, etc., Dangerous Goods, and Toxic Substances

Section 1 Regulations Concerning Machines

(Protective Measures for Protrusions of Moving Parts)

Article 25 The protective measures prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 43 of the Act are as follows:

- (i) to make protrusions of moving parts a sunken-head type, or to provide a cover; and
- (ii) to provide a cover or an enclosure for a power transmission or speed control sections.

(Gas Masks that Should Fulfill Standards)

Article 26 Gas masks prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 13, paragraph (5) of the Order are as follows:

- (i) gas masks for carbon monoxide;
- (ii) gas masks for ammonium; and
- (iii) gas masks for sulfurous acid gas.

(Use of Machines that Comply with Standards)

Article 27 As regards the machines, etc., listed in the Appended Table 2 of the Act and machines, etc., listed in each item of Article 13, paragraph (3) of the Order, the employer may not use the machines, etc., unless they fulfill the standard or are equipped with safety devices specified by the Minister of Health, Labour and Welfare set forth in Article 42 of the Act.

(Matters to be Notified)

Article 27-2 The matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 43-2 of the Act are as follows:

- (i) matters that enable to identify the machines, etc., subject to be notified; and
- (ii) facts indicating that the machines, etc., fall under any of the item of Article 43-2 of the Act.

(Effective Maintenance of Safety Devices)

Article 28 The employer must carry out the inspection and maintenance for a safety device, a cover, an enclosure, etc., provided pursuant to the Act and orders based on the Act (hereinafter referred to as "safety device, etc.") so that they may be used in an effective condition.

Article 29 (1) As regards the safety device, etc., a worker must observe the following matters:

- (i) not to remove the safety device, etc., or make it lose its function;
 - (ii) to obtain in advance the permission of the employer, when it is necessary to temporarily remove the safety device, etc., or to make it lose its function;
 - (iii) to immediately restore to its original condition, when having removed the safety device, etc., or it has been made to lose its function by obtaining the permission under the preceding item, after the necessity ceases to exist; and
 - (iv) to immediately report the fact to the employer, when having discovered that safety device, etc., has been removed or has lost its function.
- (2) The employer must promptly take appropriate measures when the report pursuant to the provisions of item (iv) of the preceding paragraph has been made.

(Publication of Self-Inspection Guidelines)

Article 29-2 The provisions of Article 24 apply mutatis mutandis to the publication of the self-inspection guidelines pursuant to the provisions of Article 45, paragraph (3) of the Act.

Section 2 Regulations Concerning Dangerous Goods and Toxic

Substances

(Dangerous Goods and Toxic Substances Whose Names Should be Labeled)

Article 30 The substances prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 18, item (xxxix) of the Order are to be the preparations and other substances containing the substances listed in the left column of the Appended Table 2 (excluding those containing the amount of the substances listed in the left column is the value listed in the right column of the same Table and those listed in the reference column of the same Table).

Article 31 The substances prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 18, item (xl) of the Order are as follows:

- (i) preparations and other substances which contain dichlorobenzidine and its salts and the content of dichlorobenzidine and its salts is 1% in weight;
- (ii) preparations and other substances which contain alpha-Naphthylamine and its salts and the content of alpha-Naphthylamine and its salts is 1% in weight;
- (iii) preparations and other substances which contain Chlorinated Biphenyl (PCB) and the content of Chlorinated Biphenyl is 0.1% or more and 1% or less in weight;
- (iv) preparations and other substances which contain o-tolidine and its salts and the content of o-tolidine and its salts is 1% in weight (of these substances);
- (v) preparations and other substances which contain Dianisidine and its salts and the content of Dianisidine and its salts is 1% in weight;
- (vi) preparations and other substances which contain beryllium and its compounds and the content of beryllium and its compounds is 0.1% or more and 1% or less of the weight (0.1% or more and 3% or less for alloy); and
- (vii) preparations and other substances which contain benzotrichloride and the content of benzotrichloride is 0.1% or more and 0.5% or less in weight.

(Labeling of Names)

Article 32 The labeling pursuant to the provisions of Article 57, paragraph (1) of the Act must be made by printing matters listed in each item of the same paragraph (hereinafter referred to as "indication matters" in this Article) on the container or package of the substance or by affixing labels on which the indication matters have been printed; provided, however, that when printing all the indication matters on the package or container or affixing a label on which all the indication matters are printed is difficult, indication by binding a label printed with the indication matters around the package or container is permitted for the matters listed in item (i), items (c) through (e) and item (ii) of

the same paragraph.

Article 33 The matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 57, paragraph (1), item (i), (e) of the Act are as follows:

- (i) name (for a corporation, its name), address and telephone number of the person who provides the labeling pursuant to the provisions of Article 57, paragraph (1) of the Act;
- (ii) warning statements; and
- (iii) stability and reactivity.

(Delivery of Documents)

Article 34 The document pursuant to the provisions of Article 57, paragraph (2) of the Act must be delivered when it is transferred or furnished by means other than those prescribed in paragraph (1) of the same Article; provided, however, that this does not apply when the document is transferred or furnished continuously or repeatedly, and when the delivery of the document has already been made.

(Dangerous Goods and Toxic Substances Whose Names Should be Notified)

Article 34-2 The substances prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in the Appended Table 9, item 634 of the Order are to be the preparations and other substances containing the substances listed in the left column of the Appended Table 2-2 (excluding those which contain the amount of substances in the left column is the value listed in the right column and those listed in the reference column of the same Table).

Article 34-2-2 The substances prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in the Attached Table 9, item 635 of the Order are as follows:

- (i) preparations and other substances which contain dichlorobenzidine and its salts and the content of dichlorobenzidine and its salts is 0.1% or more and 1% or less in weight;
- (ii) preparations and other substances which contain alpha-Naphthylamine and its salts and the content of alpha-Naphthylamine and its salts is 1% in weight;
- (iii) preparations and other substances which contain Chlorinated Biphenyl (PCB) and the content of Chlorinated Biphenyl is 0.1% or more and 1% or less in weight;
- (iv) preparations and other substances which contain o-tolidine and its salts and the content of o-tolidine and its salts is 0.1% or more and 1% or less in

- weight;
- (v) preparations and other substances which contain Dianisidine and its salts and the content of Dianisidine and its salts is 0.1% or more and 1% or less in weight;
 - (vi) preparations and other substances which contain beryllium and its compounds and the content of beryllium and its compounds 0.1% or more and 1% or less in weight (0.1% or more and 3% or less for alloy); and
 - (vii) preparations and other substances which contain benzotrighloride and the content of benzotrighloride is 0.1% or more and 0.5% or less in weight.

(Notice of Names)

Article 34-2-3 The methods prescribed by the Order of the Ministry of Health, Labour and welfare set forth in Article 57-2, paragraph (1) and (2) of the Act are to be the issue of magnetic disk, transmission by facsimile device and other methods, and it is to be considered that the other party has agreed to the notice being sent by that method.

Article 34-2-4 The matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 57-2, paragraph (1), item (vii) of the Act are as follows:

- (i) name (for a corporation, its name), address and telephone number of the person who provides the notification pursuant to the provisions of Article 57-2, paragraph (1) of the Act;
- (ii) summary of the danger or harmful effect;
- (iii) stability and reactivity;
- (iv) applicable laws and regulations; and
- (v) other matters that serve as reference.

Article 34-2-5 The notice pursuant to the provisions of Article 57-2, paragraph (1) of the Act must be made by the time the notifiable substance in the same paragraph are transferred or furnished; provided, however, this does not apply if the notice has already been made, when the substances are transferred or furnished continuously or repeatedly.

Article 34-2-6 Among the matters set forth in Article 57-2, paragraph (1), item (ii) of the Act, for the content of ingredients, the weight percentage of each substance listed in Appended Table 3, item (1), 1 to 7 of the Order and in Appended Table 9, item (1) to (633) of the Order must be notified. The indication of weight percentage in this case may be made by figures within the range of figure in which fractions less than 10% are rounded down and those fractions are rounded up.

(Investigation of Harmful Effect)

Article 34-3 (1) The investigation of harmful effect pursuant to the provisions of Article 57-3, paragraph (1) of the Act must be carried out in the following prescribed manner:

- (i) to carry out any of the test out of the mutagenicity test, the test from which information equivalent to or better than that can be obtained by a mutagenicity test concerning carcinogenicity of chemical substances, or the carcinogenicity test; and
 - (ii) to carry out at the testing laboratory, etc., found as having the technical basis to properly conduct toxicity investigation with respect to the organization, equipment, etc.
- (2) The standards related to the organization, equipment, etc., that should be provided at the testing laboratory set forth in item (ii) of the preceding paragraph are specified by the Minister of Health, Labour and Welfare.

(Notification of Names of New Chemical Substances and Results of of Investigations of the Their Harmful Effect)

Article 34-4 A person who seeks to submit a notification pursuant to the provisions of Article 57-3, paragraph (1) of the Act must submit the notification using Form No. 4-3 accompanied by a document showing the result of the toxicity test prescribed in paragraph (1) of the preceding Article for the new chemical substance prescribed in the same paragraph Act pertaining to the notification (hereinafter referred to as "new chemical substance" in this Section), a document certifying that the test on the harmful effect has been carried out at the testing facilities, etc., which satisfies the standard provided by the Minister of Health, Labour and Welfare set forth in paragraph (2) of the same Article and a document indicating the planned method of manufacturing and handling the new chemical substance to the Minister of Health, Labour and Welfare.

(Application for Confirmation by the Minister of Health, Labour and Welfare to the Effect that Workers are not in Danger of Exposure to New Chemical Substances)

Article 34-5 A person who seeks to receive the confirmation set forth in Article 57-3, paragraph (1), item (i) of the Act submit a written application using Form No. 4-4 to the Minister of Health, Labour and Welfare within 30 days prior to the day when the new chemical substance is to be first manufactured or imported based on the confirmation, by attaching a document indicating the planned method of manufacture or handling of the new chemical substance.

Article 34-6 The employer who has received the confirmation set forth in the preceding Article must notify the Minister of Health, Labour and Welfare in writing without delay when there are any changes in the matters stated in the written application or the documents set forth in the same Article.

Article 34-7 When the Minister of Health, Labour and Welfare, after making the confirmation set forth in Article 57-3, paragraph (1), item (i), comes to find that workers are in danger of exposure to the new chemical substances based on the notification pursuant to the provisions of the preceding Article or other materials, is to revoke the confirmation and notify the fact to the employer pertaining to the confirmation without delay.

(Application for Confirmation by the Minister of Health, Labour and Welfare to the Effect that New Chemical Substances Do Not Have a Harmful Effect)

Article 34-8 A person who seeks to receive the confirmation set forth in Article 57-3, paragraph (1), item (ii) of the Act must submit a written application using Form No. 4-4 to the Minister of Health, Labour and Welfare within 30 days prior to the day when the new chemical substance is to be first manufactured or imported based on the confirmation, by a document indicating the knowledge and information of the fact that the new chemical substance is free from harmful effects provided under the following Article.

(Toxicity Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 57-3, Paragraph (1), Item (ii) of the Act)

Article 34-9 The harmful effect prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 57-3, paragraph (1), item (ii) of the Act is to be carcinogenicity.

(Application for Confirmation by the Minister of Health, Labour and Welfare Pertaining to Manufacture or Importation of New Chemical Substances in a Small Quantity)

Article 34-10 A person who seeks to receive the confirmation set forth in Article 18-4 of the Order must submit a written application using Form No. 4-4 to the Minister of Health, Labour and Welfare within 30 days prior to the day when the new chemical substance is to be first manufactured or imported based on the confirmation.

Article 34-11 The confirmation set forth in Article 18-4 of the Order is to be valid for two years.

(Notice)

Article 34-12 The Minister of Health, Labour and Welfare, when having received an application set forth in Article 34-5, Article 34-8, and Article 34-10, is to examine the application and notify the applicant of the results of the examination without delay.

(Case Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 57-3, Paragraph (1), Item (iv) of the Act)

Article 34-13 Cases prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 57-3, paragraph (1), item (iv) of the Act are to be cases in which workers are not likely to be exposed to new chemical substances such as when workers are not obliged to do the work of subdividing or repacking the chemical substance in the areas of Japan.

(Publication of Names of the New Chemical Substances)

Article 34-14 (1) The publication of names of new chemical substances pursuant to the provisions of Article 57-3, paragraph (3) of the Act is to be made within a year after the receipt of the notification pursuant to the provisions of paragraph (1) of the same Article or after the confirmation set forth in item (ii) of the same paragraph (when the application pursuant to the provisions of Article 36, paragraph (1) of the Patent Act (Act No. 121 of 1959) in regard to the new chemical substances has been submitted, promptly after the publication of the application pursuant to the provisions of Article 64, paragraph (1) of the same Act has been made or after the patent application has been published in the patent gazette pursuant to the provisions of Article 66, paragraph (3) of the same Act), as provided for by the following paragraph.
(2) The publication of the names of new chemical substances is to be made periodically once every period not exceeding three months by publishing them in the official gazette.

(Hearing Opinions from Persons with Relevant Expertise)

Article 34-15 The Minister of Health, Labour and Welfare, when hearing opinions from persons with relevant expertise pursuant to the provisions of Article 57-3, paragraph (4) of the Act, is to appoint review members in accordance with the content of the subject to be reviewed, from among the those listed in the the name list of candidates of review members for the result of mutagenicity test, etc., set forth in the following Article, and promptly hear the opinions of those members.

(Name List of Candidates of Review Members for the Results of Mutagenicity Tests)

Article 34-16 The Minister of Health, Labour and Welfare is to entrust

candidates of review member for the results of mutagenicity test, etc., from those who have high-level expert knowledge on the investigation of harmful effect of chemical substances, and prepare and publicize the name list of candidates of review members for the result of mutagenicity test, etc.

(Report to the Central Labour Standards Council)

Article 34-17 When having heard the opinion of persons with relevant expertise on the results of investigation of the harmful effect of new chemical substances pursuant to the provisions of Article 57-3, paragraph (4) of the Act, the Minister of Health, Labour and Welfare is to report the content of the opinions to the Labour Policy Council within a year after the names of the new chemical substances are publicized pursuant to the provisions of paragraph (3) of the same Article.

(Instructions to Investigate the Harmful Effect of Chemical Substances)

Article 34-18 Instructions pursuant to the provisions of Article 57-4, paragraph (1) of the Act are to be given by a document stating the names of chemical substances which are subject to the investigation of the harmful effect prescribed by the same paragraph, reasons for carrying out the investigation, method of the investigation and other necessary matters.

(Employers Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 57-4, Paragraph (1) of the Act)

Article 34-19 An employer prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 57-4, paragraph (1) of the Act is to be the employer who has manufactured, imported or used chemical substances that have the possibility of causing cancer or other serious impairment of workers' health.

(Application, Mutatis Mutandis)

Article 34-20 The provisions set forth in Article 34-15 and Article 34-16 apply mutatis mutandis to the case in which opinions of persons with relevant expertise are to be obtained pursuant to the provisions of Article 57-4, paragraph (3) of the Act. In this case, the term " the name list of candidates of review members for the results of mutagenicity test, etc." in these provisions are deemed to be replaced with "the name list of candidates of review members for the instructions on carcinogenicity test," and the term "candidates of review members for the results of mutagenicity test, etc." in Article 34-16 is deemed to be replaced with "candidates of review members for the instructions on carcinogenicity test."

(Report to the Central Labour Standards Council)

Article 34-21 When having received from an employer a report on the results of investigations carried out on the harmful effect of chemical substances based on the instructions given pursuant to the provisions of Article 57-4, paragraph (1) of the Act, the Minister of Health, Labour and Welfare is to report the content of the report to the Labour Policy Council within a year from the day the report was received.

Chapter IV Safety and Health Education

(Education at the Time of Employment)

Article 35 (1) When having employed a new worker or changed the content of work assigned to a worker, the employer must educate the worker on matters which are necessary as regards safety and health among the following matters without delay; provided, however, that for a worker employed at a workplace falling under the type of business listed in Article 2, item (iii) of the Order, the education on matters listed in items (i) through (iv) may be omitted:

- (i) matters related to danger or harmful effect of machines, etc., or raw materials, etc., and those related to methods of handling thereof;
 - (ii) matters related to performance of safety devices, harmful substance control devices, or personal protective equipment and matters related to methods of handling thereof;
 - (iii) matters related to operation procedures;
 - (iv) matters related to inspection at the time of commencement of work;
 - (v) matters related to the causes and prevention of diseases which workers are susceptible regarding the work;
 - (vi) matters related to keeping the workplace in order and maintenance of its sanitary conditions;
 - (vii) matters related to emergency measures and evacuation at the time of an accident; and
 - (viii) beyond what is set forth in each of the preceding item, matters necessary for maintaining safety and health related to the work.
- (2) As regards the workers who are found to have sufficient knowledge and skill related to all or part of the matters listed in each item of the preceding paragraph, the employer may omit education on those matters.

(Work Necessitating Special Education)

Article 36 Dangerous or harmful work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 59, paragraph (3) of the Act is as follows:

- (i) work involving replacement of grinding wheels or their test runs at the time

- of replacement;
- (ii) work involving fitting, removal, or adjustment of metal dies of a power-driven press machine (hereinafter referred to as "power press"), or of blades of shearing machines, or of safety devices or safety enclosures of power press or shearing machines;
 - (iii) work involving welding or cutting of metals by arc welding equipment (hereinafter referred to as "arc welding, etc.");
 - (iv) work involving installation, inspection, repairing or operation of charged circuits with high voltage (meaning circuits with voltages exceeding 750 V and 7000 V or less for DC or exceeding 600 V and 7,000 V or less for AC; the same applies hereinafter) or charged circuits with super-high voltage (meaning circuits with voltages exceeding 7,000 V; the same applies hereinafter) or their supports; the work involving installation or repairing of charged circuits with low voltage (meaning circuits with voltages 750 V or less for DC or 600 V or less for AC; the same applies hereinafter) (excluding voltages to the ground are 50 V or less or those for telegraphy or telephone with voltages not high enough to cause the danger of an electric shock); and the work involving operation of switches with exposed charging units in the low-voltage circuits installed in sectioned spaces such as switchboard rooms or substations (excluding voltages to ground are 50 V or less or those for telegraphy or telephone with voltages not high enough to cause the danger of electric shock);
 - (v) work operating a forklift with a maximum load of less than 1 ton (excluding the case of traveling on the road under Article 2, paragraph (1), item (i) of the Road Traffic Act (Act No. 105 of 1960) (hereinafter referred to as "road"));
 - (v)-2 work operating a shovel loader or a fork loader with a maximum load of less than 1 ton (excluding the case of traveling on the road);
 - (v)-3 work operating a transporting vehicle on rough terrain with a maximum loading capacity of less than 1 ton (excluding the case of traveling on the road);
 - (vi) work operating a cargo lifting appliance with a limited capacity of less than 5 tons;
 - (vii) work operating a skyline logging cable crane (meaning a yarder, cables, carriers, supports, fittings thereof and designed to lift and carry logs and firewood in the air, utilizing power; the same applies hereinafter);
 - (viii) work involving the felling of standing trees with a chest-height diameter of 70 cm or more, felling of standing trees with a chest-height diameter of 20 cm or more and with its center of gravity extremely deviated, felling of trees by the special methods as hang-up cutting, etc., or disposing of trees including a hanging tree with a chest-height diameter of 20 cm or more;
 - (viii)-2 work using a chain saw for the felling of a standing tree, disposing of a

- hanging tree, or logging (excluding the work listed in the preceding item);
- (ix) work operating a machine listed in the Appended Table 7, item (1), (2), (3) or (6) of the Order with the base machine weight of less than 3 tons, equipped with power-driven system and capable of self-propelling to unspecified places (excluding the case of traveling on the road);
- (ix)-2 work operating a machine listed in the Appended Table 7, item (3) of the Order, equipped with power-driven system and other than that capable of self-propelling to unspecified places;
- (ix)-3 work operating the working attachment of a machine listed in the Appended Table 7, item (3) of the Order, equipped with power-driven system and capable of self-propelling to unspecified places (excluding operation in the operator's seat on the body);
- (x) work operating a machine listed in the Appended Table 7, item (4) of the Order, those equipped with power-driven system and capable of self-propelling to unspecified places (excluding the case of traveling on the road);
- (x)-2 work operating the working attachment of a machine listed in the Appended Table 7, item (5) of the Order;
- (x)-3 work operating boring machines;
- (x)-4 work involving adjustment or operation of jack-type lifting machines (meaning machines equipped with multiple holding mechanisms (meaning mechanisms which hold a load by tightening a wire rope, etc.; the same applies hereinafter) that lift a load up and down with wire rope, etc., by opening and closing the holding mechanisms alternately to expand and contract the distance between the holding mechanisms using power; the same applies hereinafter), in the case of carrying out construction work;
- (x)-5 work operating (excluding the case of traveling on the road) a vehicle for work at height (meaning the vehicle set forth in Article 10, item (iv) of the Order; the same applies hereinafter) with the working floor of less than 10m in height (meaning the height set forth in Article 10, item (iv) of the Order);
- (xi) work operating a hoist with power-driven system (excluding electric hoists, air hoists and other hoists pertaining to gondolas);
- (xii) Deleted;
- (xiii) work involving operation of the machines, etc. (excluding a winching system) listed in Article 15, paragraph (1), item (viii) of the Order;
- (xiv) work handling a small-sized boiler (meaning a small-sized boiler set forth in Article 1, item (iv) of the Order, the same applies hereinafter);
- (xv) work operating cranes listed as follows (excluding a mobile crane (meaning a mobile crane set forth in Article 1, item (viii) of the Order, the same applies hereinafter)):
 - (a) a crane having a lifting capacity of less than 5 tons;
 - (b) a telfer having a lifting capacity of 5 tons or more;

- (xvi) work operating a mobile crane with a lifting capacity of less than 1 ton (excluding the case of traveling on the road);
- (xvii) work operating a derrick with a lifting capacity of less than 5 tons;
- (xviii) work operating a lift for construction work;
- (xix) work involving the sling work for a crane, mobile crane or derrick with a lifting capacity of less than 1 ton;
- (xx) work operating a gondola;
- (xx)-2 work operating an air compressor for sending air to a work chamber or man-lock chamber;
- (xxi) work operating valves or cocks for adjusting the amount of air to be delivered to working chambers pertaining to work in compressed air;
- (xxii) work operating valves and cocks for adjusting the amount of fresh air to be delivered to or air to be let out of a man-lock chamber;
- (xxiii) work operating valves and cocks for adjusting ventilation to diving workers;
- (xxiv) work operating a recompression chamber;
- (xxiv)-2 work pertaining to work in hyperbaric chamber;
- (xxv) work handling tetraalkyl lead, etc., listed in the Appended Table 5 of the Order;
- (xxvi) work pertaining to the work at the place of an oxygen-deficient danger listed in the Appended Table 6 of the Order;
- (xxvii) work involving handling, maintenance and repair of special chemical facilities (excluding maintenance work of the class-1 pressure vessels prescribed in Article 20, item (v) of the Order);
- (xxviii) work involving radiography by using X-ray apparatus or gamma-ray irradiation apparatus;
- (xxviii)-2 work handling nuclear fuel substances (meaning nuclear fuel substances prescribed in Article 3, item (ii) of the Atomic Energy Basic Act (Act No. 186 of 1955); the same applies in the following item), spent nuclear fuel (meaning spent nuclear fuel prescribed by Article 2, paragraph (8) of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957); the same applies in the following item) or materials contaminated with those substances (including nuclear fission product; the same applies in the following item) in the controlled area (meaning the controlled area prescribed in Article 3, paragraph (1) of the Regulation on Prevention of Ionizing Radiation Hazards (Order of the Ministry of Labour No. 41 of 1972); the same applies in the following item) of the processing facilities (meaning the processing facilities prescribed in Article 13, paragraph (2), item (ii) of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Act No. 166 of 1957)), the reprocessing facilities (meaning the reprocessing facilities prescribed in

- Article 44, paragraph (2), item (ii) of the same Act) or facilities handling those substances (meaning the facilities prescribed in Article 53, item (iii) of the same Act (limited to the facilities handling nuclear fuel substances prescribed in Article 41 of the Enforcement Order of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors (Cabinet Order No. 324 of 1957)));
- (xxviii)-3 work handling nuclear fuel substances, spent nuclear fuel or materials contaminated with such substances in the controlled area of nuclear reactor facilities (meaning the facilities prescribed in Article 23, paragraph (2), item (v) of the Act on the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors);
- (xxix) work pertaining to the specified dust operation set forth in Article 2, paragraph (1), item (iii) of the Ordinance on Prevention of Hazards Due to Dust (Order of the Ministry of Labour No. 18 of 1979, hereinafter referred to as the "Dust Ordinance") (excluding the work that fall under work listed in each item of Article 3 of the Dust Ordinance carried out by controlling oil or water poured by the equipment);
- (xxx) work pertaining to excavation of tunnel, etc. and its associated work such as muck-carrying work, material-carrying work and concrete placing work of tunnel lining (limited to work performed inside the tunnel concerned);
- (xxxii) work pertaining to instruction, etc. (meaning setting, altering or confirming the motion sequence, position or velocity of a manipulator for a industrial robot (a machine which is composed of manipulators and memory devices (including variable sequence control units and fixed sequence control units; hereinafter the same applies in this item) and capable of automatically performing the motions of manipulators such as telescopic, bending or stretching, raising or lowering, moving to the right or left, revolving motions, and their combined motions based on the information in the memory device, excluding those under research and development or others specified by the Minister of Health, Labour and Welfare), excluding those carried out while the power source of the industrial robot is cut off; hereinafter the same applies in this item) for the industrial robot within its movable range (meaning the maximum movable range in which manipulators and other moving parts of the industrial robot are capable of moving based on the information in the memory device; the same applies hereinafter) and pertaining to the operation of the apparatus for the instruction, etc. carried out outside of the movable range in cooperation with the worker who carries out the instruction, etc., within the movable range;
- (xxxiii) work related to inspection, repair or adjustment (excluding those corresponding to instruction, etc.), or the confirmation of the result of these actions (hereinafter referred to as "inspection, etc." in this item) (limited to

those carried out while the industrial robot is in operation; hereinafter the same applies in this item), or work related to the operation of apparatus pertaining to the inspection, etc. carried out outside of the movable range in cooperation with the worker who carries out the instruction, etc. within the movable range;

(xxxiii) out of the work involving the assembly of automobile tires (excluding those for two-wheeled automobiles), the work of filling the tires with air using an air compressor;

(xxxiv) work of handling soot and dust, burnt ash and other burnt residues in waste incineration facilities that have waste incinerators specified in the Appended Table 1, item (5) of the Enforcement Order of the Act on Special Measures for Prevention of Dioxin, etc. (Cabinet Order No. 433 of 1999) (hereinafter referred to as "waste incineration facilities" except in Article 90, item (v)-3) (excluding the work listed in item (xxxvi) below);

(xxxv) work on maintenance and inspection, etc., of equipment such as waste incinerator and dust collector, etc. installed in waste incineration facilities;

(xxxvi) work of dismantling, etc., equipment such as waste incinerators and dust collectors, etc., installed in waste incineration facilities, and work handling soot and dust, burnt ash and other burnt residues associated with the work; and

(xxxvii) work listed in each item of Article 4, paragraph (1) of the Ordinance on Prevention of Health Impairment due to Asbestos (Order of the Ministry of Health, Labour and Welfare No. 21 of 2005; hereinafter referred to as the "Asbestos Ordinance").

(Omission of Subjects of Special Education Curricula)

Article 37 The employer may, for workers who are found to have sufficient knowledge and skill pertaining to all or part of the curricula of the special education set forth in Article 59, paragraph (3) of the Act (hereinafter referred to as "special education"), omit whole or a part of the subjects of the special education curricula.

(Preserving the Record of Special Education)

Article 38 When having given special education to workers, the employer must record the subjects and names of those who attended the special education course and preserve the records for three years.

(Details of the Special Education)

Article 39 Beyond what is set forth the preceding two Articles and Article 592-7, necessary matters in implementing the special education pertaining to the work listed in Article 36, items (i) through (xiii), item (xxvii), and items (xxx)

through (xxxvi) are specified by the Minister of Health, Labour and Welfare.

(Education of Foremen)

Article 40 (1) The matters prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 60, item (iii) of the Act are to be as follows:

- (i) matters related to the investigation of the danger or harmful effect, etc., prescribed in Article 28-2, paragraph (1) of the Act, and measures to be taken based on the results of the investigation;
- (ii) matters related to measures when abnormalities occur; and
- (iii) other matters related to actions to be taken by the site supervisor in regard to prevention of industrial accidents.

(2) The education for safety and health set forth in Article 60 of the Act must be implemented for the matter listed in the left column of the following Table for the hours equal to or longer than the hours listed in the right column of the same Table.

Matter	No. of Hours
Matters listed in Article 60, item (i) of the Act (i) method of deciding work procedures (ii) method of appropriate arrangement of workers	2 hours
Matters listed in Article 60, item (ii) of the Act (i) method of guidance and education (ii) method of supervision and instruction during work	2.5 hours
Matters listed in item (i) of the preceding paragraph (i) method of investigation of the danger or harm, etc. (ii) measures to be taken based on the results of the investigation of the danger or harm, etc. (iii) specific method of improvement for equipment, work, etc.	4 hours
Matters listed in item (ii) of the preceding paragraph (i) measures to be taken when abnormality occurs (ii) measures to be taken when natural disasters occur	1.5 hours
Matters listed in item (iii) of the preceding paragraph (i) method of maintenance and management of the equipment and work place pertaining to work (ii) method of maintaining worker interest in, and eliciting ideas from, workers for preventing industrial accidents	2 hours

(3) The employer may, for a person who is found to have sufficient knowledge and skill of all or part of the matters listed in the left column of the Table set forth in the preceding paragraph, omit the education of those matters.

(Publication of Guidelines)

Article 40-2 The provisions of Article 24 apply mutatis mutandis to the publication of the guidelines pursuant to the provisions of Article 60-2, paragraph (2) of the Act.

(Plans of Safety and Health Education at Designated Workplaces and Reports of Results of Their Implementation)

Article 40-3 (1) As regards designated workplaces or workplaces that the Director of the competent Prefectural Labour Bureau designates in consideration of the occurrence rate of industrial accidents, etc., the employer must formulate a specific plan of education for safety or health pursuant to the provisions of Article 59 and Article 60 of the Act.

(2) The employer set forth in the preceding paragraph must submit a report using Form No. 4-5 to the Chief of the competent Labour Standards Inspection Office by April 30 of each year, notifying the results of education for safety or health implemented during the period of April 1 of the preceding year to March 31 of that year pursuant to the provisions of Article 59 and Article 60 of the Act.

Chapter V Restriction on Employment

(Qualifications Regarding Restriction on Employment)

Article 41 A person who is eligible to engage in the work prescribed in Article 61, paragraph (1) of the Act is to be a person listed in the right column of the Appended Table 3 in accordance with the business type listed in the left column of the same Table.

(Special Provisions for Vocational Training)

Article 42 (1) The employer, when it is necessary to have a worker who is to receive the approved vocational training pertaining to the approval set forth in Article 24, paragraph (1) of the Human Resources Development Promotion Act (hereinafter referred to as "trainee") obtain skills to engage in work listed in Article 20, item (ii), item (iii), items (v) through (viii) or items (xi) through (xvi) of the Order, has taken the following measures, may have the trainee engage in the work after six months have passed from the commencement of the vocational training (five months for a trainee of the training course for a period of six months and who is to engage in work listed in Article 20, item (ii), item (iii), or items (v) through (viii) of the Order, three months for a trainee of the training course and who is engaged in the work listed in items (xi) through (xvi)) notwithstanding the provisions of Article 61, paragraph (1) of the Act:

(i) to have the vocational training instructor advise the trainee on the necessary matters for preventing possible danger or health impairment from

- the work to be performed throughout the period during which the trainee is to engage in the work; and
- (ii) to provide the trainee with education concerning the matters necessary for the maintenance of safety and health for the work to be performed in advance.
- (2) The employer , when it is necessary to have the trainee engage in the work listed in Article 20, paragraph (1), item (x) of the Order, has taken the measures set forth in the preceding paragraph, notwithstanding the provisions of Article 61, paragraph (1) of the Act, may have the trainee engage in the work immediately after the commencement of the vocational training.
- (3) The provisions of Article 61, paragraph (2) of the Act do not apply to the trainee set forth the preceding two paragraphs.

Chapter VI Measures for Maintaining and Promoting Workers' Health

Section 1 Working Environment Measurement

(Publication of Working Environment Measurement Guidelines)

Article 42-2 The provisions of Article 24 apply mutatis mutandis to the publication of the guidelines for the working environment measurement pursuant to the provisions of Article 65, paragraph (3) of the Act.

(Instructions for Working Environment Measurement)

Article 42-3 The instructions pursuant to the provisions of Article 65, paragraph (5) of the Act are to be given by a document stating the workshop where the working environment measurement should be performed and other necessary matters.

Section 1-2 Medical Examinations

(Medical Examination at the Time of Employment)

Article 43 When employing a worker as a regular employee, the employer must provide the worker with a medical examination by a physician on the following check items; provided, however, that this does not apply to the case of employing a person who has undergone a medical examination by a physician within three months before the time of employment and the person has submitted the document certifying the result of the medical examination, for the check items corresponding to those of the medical examination:

- (i) investigation of anamnesis and work history;
- (ii) examination of the presence of subjective and objective symptoms;
- (iii) examination of height, weight, eyesight, and hearing (hearing pertaining to sound levels of 1,000 HZ or 4,000 HZ; the same applies in paragraph (1),

- item (iii) of the following Article);
- (iv) thoracic X-ray examination;
- (v) blood pressure measurement;
- (vi) examination of hemoglobin content and erythrocyte count (referred to as "anemia examination" in paragraph (1), item (vi) of the following Article);
- (vii) examination of serum glutamic oxaloacetic transaminase (GOT), glutamic pyruvic transaminase (GPT) and gamma-glutamyl transpeptidase (GGT) (referred to as "examination of hepatic function" in paragraph (1), item (vii) of the following Article).
- (viii) examination of total cholesterol level in blood serum, high-density lipoprotein cholesterol (HDL cholesterol) and triglyceride level in blood serum (referred to as "examination of blood lipid levels" in paragraph (1), item (viii) of the following Article);
- (ix) examination of blood sugar level;
- (x) examination of the presence or absence of sugar and protein in the urine (referred to as "urine analysis" in paragraph (1), item (x) of the following Article); and
- (xi) electrocardiogram examination.

(Periodical Medical Examination)

Article 44 (1) The employer must provide a regularly employed worker (excluding the worker prescribed in Article 45, paragraph (1)) with a medical examination by a physician on the following check items periodically once each period not exceeding a year:

- (i) investigation of anamnesis and work history;
- (ii) examination of the presence of subjective and objective symptoms;
- (iii) examination of height, weight, eyesight and hearing;
- (iv) thoracic X-ray examination and sputum examination;
- (v) blood pressure measurement;
- (vi) anemia examination;
- (vii) examination of hepatic function;
- (viii) examination of blood lipid levels;
- (ix) examination of blood sugar level;
- (x) urine analysis; and
- (xi) electrocardiogram examination.

(2) The check items for the medical examination set forth the preceding paragraph listed in the following items are to be the items listed in each item of the same paragraph (excluding item (iv)):

- (i) the medical examination conducted, for a person who has not been diagnosed as requiring continuous medical observation (meaning a person who was not diagnosed as having traces of a cured past disease which is

considered to be tuberculosis from the results of the thoracic x-ray examination, and a person who was not diagnosed as being apt to be affected by tuberculosis by the physician in charge; the same applies in the following item) from the result of the medical examination conducted pursuant to the provisions of the preceding Article or the preceding paragraph in the fiscal year (meaning the 12 months from April 1 through March 31; hereinafter the same applies in this paragraph and Article 44-2 and Article 46) in which the person reached the ages of 16, in fiscal years in which the person reaches the ages of 17 and 18 respectively by the employer who conducted the medical examination; and

- (ii) the medical examination that is conducted for a person who has not been diagnosed as requiring continuous medical observation from the result of the medical examination conducted pursuant to the provisions of the preceding Article in the fiscal year in which the person reached the ages of 17, in fiscal years in which the person reaches the ages of 18, by the employer who conducted the medical examination.
- (3) Check items listed in paragraph (1), item (iii), item (iv), and items (vi) through (xi) may be omitted when the physician finds them unnecessary, based on the standards provided by the Minister of Health, Labour and Welfare.
- (4) For a person who has received the medical examination set forth in the preceding Article, Article 45-2 or the first sentence of Article 66, paragraph (2) of the Act (including a person who has submitted the documents prescribed in the proviso of preceding Article), the medical examination set forth in paragraph (1) may be provided by omitting the check items corresponding to those which have already been received limited to one year from the date on which the medical examination has been conducted.
- (5) The check item listed in paragraph (1), item (iii) (limited to the hearing test) may be substituted with a hearing test (excluding hearing pertaining to the sound level of 1,000 Hz or 4,000 Hz) found appropriate by the physician for those under the age of 45 (excluding those who are 35 and 40), notwithstanding the provisions of the same paragraph.

(Special Provisions of Medical Examination for Those 15 Years Old and Younger)

Article 44-2 (1) The employer may, notwithstanding the provisions of the preceding two Articles, choose not to provide the medical examination pursuant to these provisions (excluding the medical examination set forth in Article 43 pertaining to those who have graduated from the secondary education school under the School Education Act or an equivalent school) for those who are 15 years old or younger in the fiscal year including the day on which the medical examination set forth in the preceding two Articles is to be conducted and have

already received or are expected to receive the medical examination under Article 4 or Article 6 of the School Health Act.

- (2) A person who is 15 years old or younger in the fiscal year including the day on which the medical examination set forth in the preceding two Articles is to be conducted, and who is not specified in the preceding paragraph, may be exempted from all or a part of check items of the medical examination, when the physician finds them unnecessary.

(Medical Examination for Those Engaged in Specified Work)

Article 45 (1) The employer must provide the worker engaging regularly in work listed in Article 13, paragraph (1), item (ii) with a medical examination by a physician covering the check items listed in the items of Article 44, paragraph (1), at the time when the worker is transferred to that work and periodically once each period not exceeding six months. In this case, it is sufficient for the examination on the check item set forth in item (iv) of the same paragraph to be conducted once each period not exceeding a year.

- (2) As regards the medical examination set forth in the preceding paragraph (limited to a periodical examination), when the physician finds them unnecessary, notwithstanding the provisions of the preceding paragraph, for a person who has received a previous medical examination on the check items listed in Article 44, paragraph (1), items (vi) through (ix) and item (xi), the medical examination may be conducted by omitting all or part of those check items.
- (3) The provisions of Article 44, paragraph (3) and (4) apply mutatis mutandis to the medical examination set forth in paragraph (1). In this case, the term "for a year" in paragraph (4) of the same Article is deemed to be replaced with "for six months."
- (4) Out of the check items of the medical examination set forth in paragraph (1) (limited to a periodical examination), the check item listed in Article 44, paragraph (1), item (iii) (limited to a hearing test) may be substituted by a hearing test found appropriate by the physician (excluding hearing pertaining to the sound level of 1,000 Hz or 4,000 Hz) for a person who has already received the hearing test in the previous medical examination or a person who is under 45 years old (excluding those who are 35 and 40), notwithstanding the provisions of paragraph (1).

(Medical Examination for Workers Dispatched Overseas)

Article 45-2 (1) When seeking to dispatch a worker overseas for six months or longer, the employer must provide in advance the worker with a medical examination by a physician regarding matters listed in each item of Article 44, paragraph (1) and the matters found necessary by the physician from among

those specified by the Minister of Health, Labour and Welfare.

- (2) When having the worker who has been dispatched abroad for six months or longer assigned to a work in the area of Japan (excluding those to be assigned temporarily), the employer must provide the worker with the medical examination by a physician regarding matters listed in each item of Article 44, paragraph (1) and the matters found necessary by the physician from among those specified by the Minister of Health, Labour and Welfare.
- (3) The medical examination set forth in paragraph (1) for those who have undergone the medical examination provided for in Articles 43, Article 44 and the preceding Article or the first sentence of Article 66, paragraph (2) of the Act (including those who have submitted the documents prescribed by the proviso of Article 43, paragraph (1)) may omit the check items corresponding to those of the previously received medical examination limited to a period of six months from the day on which the previous medical examination has been conducted.
- (4) The provisions of Article 44, paragraph (3) apply mutatis mutandis to the medical examination set forth in paragraph (1) and (2). In this case, the term "item (iv) and items (vi) through (xi)" in Article 44, paragraph (3) is deemed to be replaced with "and item (iv)."

(Tuberculosis Examination)

Article 46 For the workers who have been diagnosed as having a risk of developing tuberculosis in the medical examination under Article 43, Article 44, Article 45 or the preceding Article (for the medical examination on workers other than those specified in Article 45, paragraph (1), limited to the medical examination conducted in the fiscal year after the fiscal year in which they reached 19 years of age), the employer must provide the workers with a medical examination by a physician on the following check items after approximately six months from the diagnosis. In this case, the check items listed under item (ii) may be omitted if they are found to be unnecessary by the physician:

- (i) examination by direct radiography and sputum examination; and
- (ii) auscultation, percussion and other necessary examinations.

(Examination of Feces for Food Supply Workers)

Article 47 The employer must provide the worker engaging in the work of providing meals at a dining hall or a kitchen attached to the workplace with a feces examination at the time of employment or at the time of being transferred to the work.

(Medical Examination by a Dentist)

Article 48 The employer must provide the worker engaging regularly in the work set forth in Article 22, paragraph (3) of the Order with a medical examination by a dentist at the time of employment or of transfer to the work and once each period not exceeding six months periodically after the worker has been assigned to the work.

(Instruction of Medical Examination)

Article 49 The instruction pursuant to the provisions of Article 66, paragraph (4) of the Act is to be given by a document stating the check items to be examined, the scope of workers that should undergo the medical examination and other necessary matters.

(Certificate of Medical Examination Provided by a Physician that a Worker Desired)

Article 50 The document set forth in the proviso of Article 66, paragraph (5) of the Act must be a document stating the result for each check item of the medical examination the worker has undergone.

(Voluntary Medical Examination)

Article 50-2 The requirements prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 66-2 of the Act apply to the worker who is employed as a regular employee, and engage in the midnight work four times or more per month on average during the six months prior to the date of the voluntary medical examination under the same Article.

Article 50-3 A worker falling under the requirements provided for in the preceding Article may submit to the employer the document certifying the result of the medical examination by a physician on all or part of the check items listed in each item of Article 44, paragraph (1) of the Act; provided, however, that this does not apply when 3 months have passed from the day of the medical examination.

Article 50-4 The document set forth in Article 66-2 of the Act must be a document stating the result for each check item of the medical examination the worker has undergone.

(Preparation of the Record of Results of Medical Examinations)

Article 51 The employer must prepare the individual medical examination cards (Form No. 5) for individual employees based on the results of the medical examination set forth in Article 43, Article 44, or Articles 45 through 48, or medical examination conducted through the instruction under the provision of

Article 66, paragraph (4) of the Act (including the medical examination undergone by the worker in the case set forth in the proviso of Article 66, paragraph (5) referred to as "medical examination set forth in Article 43, etc." in the following Article), or the voluntary medical examination set forth in Article 66-2 of the Act, and preserve the medical examination cards for five years.

(Hearing of Opinions of Physicians on the Results of Medical Examination)

Article 51-2 (1) A hearing of opinions of a physician or a dentist pursuant to the provisions of Article 66-4 of the Act, based on the result of medical examination set forth in Article 43, etc., must be carried out as prescribed as follows:

(i) to carry out the hearing within three months from the day when the medical examination set forth in Article 43, etc., has been conducted (in the case under the proviso of Article 66, paragraph (5) of the Act, on the day that the worker submitted the document certifying the results of the medical examination to the employer); and

(ii) to enter the opinions heard from the physician or dentist into the individual medical examination card.

(2) A hearing of opinions from a physician pursuant to the provisions of Article 66-4 of the Act, based on the result of voluntary medical examination set forth in Article 66-2 of the Act must be carried out as prescribed as follows:

(i) to carry out the hearing within two months from the day when the document certifying the result of the medical examination was submitted to the employer; and

(ii) to enter the opinions heard from the physician into the individual medical examination card.

(Publication of Guidelines)

Article 51-3 The provisions of Article 24 apply mutatis mutandis to the publication of guidelines pursuant to the provisions of Article 66-5, paragraph (2) of the Act.

(Notification of the Result of the Medical Examination)

Article 51-4 The employer must notify, without delay, a worker who has undergone a medical examination set forth in Article 66, paragraph (4), Article 43, Article 44, or Articles 45 through 48 of the Act, the results of the medical examination.

(Report of Result of Medical Examinations)

Article 52 The employer who regularly employs 50 or more workers must submit, without delay, a report of the results of a periodical medical examination

(Form No. 6) to the Chief of the competent Labour Standards Inspection Office, when the employer has conducted a medical examination set forth in Articles 44, Article 45 or Article 48 (limited to periodical examinations).

Section 1-3 Face-to-Face Guidance

(Requirement of Workers Subject to Face-to-Face Guidance)

Article 52-2 (1) The requirements prescribed by the Order of Ministry of Health, Labour and Welfare set forth in Article 66-8, paragraph (1) of the Act are to be for a person whose working hours per week has exceeded 40 hours excluding break hours and the total working hours exceeding 40 hours per week has exceeded 100 hours per month, and who is found to have accumulated fatigue; provided, however, that a worker who has undergone face-to-face guidance within one month before the date set forth in the following paragraph or other workers with similar conditions for whom the need to undergo face-to-face guidance was not found by a physician are excluded.

(2) The excess working hours set forth in the preceding paragraph must be calculated more than once a month by designating a fixed date.

(Implementation Method of Face-to-Face Guidance)

Article 52-3 (1) Face-to-face guidance is to be provided at the request of workers who fall under the requirements set forth in paragraph (1) of the preceding Article.

(2) The request set forth in the preceding paragraph is to be made without delay after the date set forth in paragraph (2) of the preceding Article.

(3) When there is a request set forth in paragraph (1) from a worker, the employer must provide face-to-face guidance without delay.

(4) An industrial physician may recommend the worker whose working conditions fall under the requirements set forth in paragraph (1) of the preceding Article to make the request set forth in paragraph (1).

(Matters to be Confirmed in Face-to-Face Guidance)

Article 52-4 The physician, in providing face-to-face guidance, is to confirm the following matters for the worker who made a request set forth in paragraph (1) of the preceding Article:

(i) working conditions of the worker;

(ii) conditions of accumulated fatigue of the worker; and

(iii) beyond what is set forth in the preceding item, mental and physical conditions of the worker.

(Certification of Face-to-Face Guidance Provided by the Physician that a

Worker Desired)

Article 52-5 The document set forth in the proviso of Article 66-8, paragraph (2) of the Act must be a document stating the following matters concerning face-to-face guidance provided for the worker:

- (i) the date of guidance;
- (ii) the name of the worker;
- (iii) the name of the physician who provided face-to-face guidance;
- (iv) the conditions of accumulated fatigue of the worker; and
- (v) beyond what is set forth in the preceding item, the mental and physical conditions of the worker.

(Preparation of Record of Results of Face-to-Face Guidance)

Article 52-6 (1) The employer must make a record of the results of the face-to-face guidance (including the face-to-face guidance provided to the worker under the case provided in the proviso of Article 66-8, paragraph (2) of the Act; the same applies in the following Article) based on its results and preserve them for five years.

(2) The record set forth in the preceding paragraph must state the matters listed in each item of the preceding Article and the opinions of the physician pursuant to the provisions of Article 66-8, paragraph (4) of the Act.

(Hearing Opinions from the Physician on the Results of Face-to-Face Guidance)

Article 52-7 The hearing of opinions from the physician based on the results of face-to-face guidance pursuant to the provisions of Article 66-8, paragraph (4) of the Act must be carried out without delay after the face-to-face guidance (after the worker submitted the document certifying the results of the face-to-face guidance in the case set forth in the proviso of Article 66-8, paragraph (2) of the Act) is implemented.

(Implementation of Necessary Measures Prescribed in Article 66-9 of the Act)

Article 52-8 (1) The necessary measures set forth in Article 66-9 of the Act are to be the implementation of face-to-face guidance or measures equivalent to face-to-face guidance.

(2) The necessary measures set forth in Article 66-9 of the Act are to be provided for the following persons:

- (i) a worker who is found to have accumulated fatigue or has health concerns due to long working hours; and
- (ii) beyond what is set forth in the preceding item, workers who fall under the standard established in the workplace concerning necessary measures set forth in Article 66-9 of the Act.

(3) The necessary measures set forth in Article 66-9 of the Act for workers set

forth in item (i) of the preceding paragraph are to be taken at the request of the worker.

Section 2 Personal Health Record

(Issuance of Personal Health Record)

Article 53 (1) A person who falls under the requirements prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 67, paragraph (1) of the Act is to be the person who has engaged in the work listed in the left column of the following Table and falls under the requirements listed in the right column of the same Table in accordance with the work, at the time of or after the separation from their service, after the date on which the Labour Standards Act (Act No. 49 of 1947) came into effect, or other persons who fall under the requirements specified by the Minister of Health, Labour and Welfare.

Work	Requirement
Work set forth in Article 23, item (i), (ii) or (xii) of the Order	To have experience of having engaged in the work for three months or longer
Work set forth in Article 23, item (iii) of the Order	Pneumoconiosis supervision classification determined pursuant to the provisions of Article 13, paragraph (2) of the Pneumoconiosis Act (Act No. 30 of 1960) is No. II or III (including as applied mutatis mutandis pursuant to Article 15, paragraph (3), Article 16, paragraph (2), and Article 16-2, paragraph (2) of the same Act)
Work set forth in Article 23, item (iv) of the Order	To have experience of having engaged in the work for four years or longer
Work set forth in Article 23, item (v) of the Order	To have experience of having engaged in the work for five years or longer
Work set forth in Article 23, item (vi) of the Order	To have experience of having engaged in the work for five years or longer
Work set forth in Article 23, item (vii) of the Order	To have experience of having engaged in the work for three years or longer
Work set forth in Article 23, item (viii) of the Order	To have tubercular shadow of a pervasive nature due to beryllium on both lungs
Work set forth in Article 23, item (ix) of the Order	To have experience of having engaged in the work for three years or longer

Work set forth in Article 23, item (x) of the Order	To have experience of having engaged in the work for four years or longer
Work set forth in Article 23, item (xi) of the Order	To have irregular shadows due to asbestos, or pleural thickening due to asbestos on both lungs

- (2) The personal health record (hereinafter referred to as "the record") is to be issued, based on the application by a person who falls under the requirement prescribed in the preceding paragraph, by the Director of the competent Prefectural Labour Bureau (for a person who falls under the requirements after the person's separation from the service, by the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the person resides).
- (3) A person who seeks to make the application set forth in the preceding paragraph must submit a Personal Health Record Issuance Application (Form No. 7) to the Director of the competent Prefectural Labour Bureau (for a person who falls under the requirements of paragraph (1) after the person's separation from the service, to the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the person resides) by attaching documents certifying the fact that the person falls under the requirements of paragraph (1) (when the document is not available, written statement on the fact) including a thoracic direct radiology or special radiology in the case of a person who seeks to make the application pertaining to the work set forth in Article 23, item (viii) or item (xi) of the Order).

(Form of the Record)

Article 54 The record is to be prepared using Form No. 8.

(Recommendation to Receive Medical Examinations)

Article 55 When issuing the record, the Director of the Prefectural Labour Bureau is to recommend the person who receives the record to undergo the medical examinations specified by the Minister of Health, Labour and Welfare.

Article 56 When making the recommendation set forth in the preceding Article, the Director of the Prefectural Labour Bureau is to notify the person who receives the record of the number of times and the method of medical examinations the person is to undergo and other matters necessary for the person to receive the examinations.

(Submission of the Record)

Article 57 (1) A person who has received the record (hereinafter referred to as

"the holder of the record"), when the person undergoes a medical examination pertaining to the recommendation set forth in Article 55 (hereinafter referred to as "the medical examination" in this Article), must submit the record to the medical institution, which performs the medical examination.

- (2) The medical institution set forth in preceding paragraph, when having performed the medical examination for the holder of the record, must record the results of the examination in the record of the person.
- (3) The medical institution set forth in paragraph (1), when having performed the medical examination for the holder of the record, must submit the report using Form No. 9 to the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the medical institution is located without delay.

(Renewal of the Record)

Article 58 The holder of the record, when having changed their name or address, must submit a personal health record renewal application (Form No. 10) within 30 days, with the record attached, to the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the holder resides, and have the record renewed.

(Reissuance of the Record)

Article 59 (1) The holder of the record, when having lost or damaged the record, must submit a personal health record reissuance application (Form No. 10) to the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the holder resides and have the record reissued.

- (2) The person who has damaged the record, when making an application set forth in the preceding paragraph, must attach the damaged record to the application form.
- (3) The holder of the record, when they find the record that had been lost after having the record reissued, must return the record that had been once lost to the Director of the Prefectural Labour Bureau set forth in paragraph (1).

(Return of the Record)

Article 60 When the holder of the record has died, the heir or the statutory agent of the holder of the record must return the record, without delay, to the Director of the Prefectural Labour Bureau who has jurisdiction over the area where the holder resided.

Section 3 Prohibition of Employing a Sick Person

Article 61 (1) The employer must prohibit a person who falls under any of the

following item from engaging in work; provided, however, that this does not apply when preventive measures for infectious disease were taken for a person listed in item (i):

- (i) a person who has contracted an infectious disease, which has a risk of communicating infectious agents to other persons;
 - (ii) a person who is suffering from such diseases as a heart disease, a kidney disease or a lung disease which are anticipated to worsen the person's physical condition as a result of employment in work; and
 - (iii) a person who is suffering from similar diseases as the diseases set forth in the preceding items specified by the Minister of Health, Labour and Welfare.
- (2) The employer must obtain in advance opinions of an industrial physician or other medical specialists, when seeking to prohibit a person from engaging in work pursuant to the provisions of the preceding paragraph.

Section 4 Publication of Guidelines

Article 61-2 The provisions of Article 24 apply mutatis mutandis to the publication of the guidelines pursuant to the provisions of Article 70-2, paragraph (1) of the Act.

Chapter VI-2 Measures for Establishing a Comfortable Working Environment

Article 61-3 (1) The Director of the Prefectural Labour Bureau, when the employer has formulated and submitted the plan necessary to implement measures for establishing a comfortable work environment, and the Director finds that the plan is appropriate in light of the guidelines set forth in Article 71-3 of the Act, may approve the plan.

(2) The Director of Prefectural Labour Bureau, in giving the assistance set forth in Article 71-4 of the Act, is to pay special consideration to the employer who obtained the approval set forth in the preceding paragraph.

Chapter VII Licenses **Section 1 License**

(Person Eligible to Obtain a License)

Article 62 A person eligible to obtain the license set forth in Article 12, paragraph (1), Article 14, or Article 61, paragraph (1) of the Act (hereinafter referred to as "license") is to be the person listed in the right column of the Appended Table 4 in accordance with the type of license listed in the left column of the same Table.

(Disqualification Clause for License)

Article 63 The person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 72, paragraph (2), item (ii) of the Act pertaining to the licenses for the operations chief of gas welding, operations chief of forestry cableway, blasting operator or cargo lifting appliance operator is to be under 18 years of age.

(Prohibition of Duplicate Acquisition of Licenses)

Article 64 A person who has already obtained a license is not allowed to obtain the same license in duplicate; provided, however, that this does not apply to the cases where a person listed in the following items obtains the license listed in each item:

- (i) a person who has a crane or derrick operator's license that limits the type of machines that the person is permitted to operate pursuant to the provisions of Article 224-4, paragraph (1) of the Safety Ordinance for Cranes (Order of the Ministry of Labour No. 34 of 1972; hereinafter referred to as the "Crane Ordinance") to floor-driving cranes (meaning the crane prescribed in Article 223, item (iii) of the Crane Ordinance, the same applies hereinafter): a crane or derrick operator's license that does not limit the type of machines allowed to operate, or a crane or derrick operator's license that limits the type of machines allowed to operate to cranes pursuant to the provisions of paragraph (2) of the same Article; and
- (ii) a person who has a crane or derrick operator's license that limits the type of machines allowed to operate pursuant to the provisions of Article 224-4, paragraph (2) of the Crane Ordinance: a crane or derrick operator's license that does not limit the type of machines allowed to operate.

(Person Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 72, Paragraph (3) of the Act)

Article 65 (1) A person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 72, paragraph (3) of the Act pertaining to the license for blasting operators is to be the person who is not able to appropriately operate the boring machine, feeder or firing machine, and is not able to appropriately inspect and treat the connection, charge for misfires and residual gunpowder in carrying out the work pertaining to the license due to mental or physical disability.

(2) A person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 72, paragraph (3) of the Act pertaining to the license for cargo lifting appliance operators is to be the person who is not able to appropriately carry out necessary operation of the cargo lifting appliance or

confirmation of the situation around the cargo lifting appliance in carrying out the work pertaining to the license due to mental or physical disability.

- (3) A person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 72, paragraph (3) of the Act pertaining to the license for operations chief of gas welding is to be the person who is not able to appropriately operate the welding apparatus in carrying out the work pertaining to the license due to the mental or physical disability.

(Consideration of Means to Cover Disability)

Article 65-2 The Director of the Prefectural Labour Bureau, when they find that the person who applied for the license for blasting operator, cargo lifting appliance operator, operations chief of gas welding falls under the person prescribed by paragraph (1), (2), or (3) of the preceding Article, and decide whether or not to grant the license to the person, must take into account the means to compensate for disability used by the person or the situation in which the disability is compensated or the level the disability is reduced due to the medical treatment which the person is actually receiving.

(License with Conditions)

Article 65-3 (1) The Director of the Prefectural Labour Bureau may grant a license for blasting operator or operations chief of gas welding to a person who has mental or physical disability by limiting the type of work which the person can operate, or by attaching other necessary conditions concerning the operation.

- (2) The Director of the Prefectural Labour Bureau may grant a license for cargo lifting appliance operator to a person who has mental or physical disability by limiting the type of cargo lifting appliance which the person can operate, or by attaching other necessary conditions concerning the operation.

(Revocation of License)

Article 66 The cases prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 74, paragraph (2), item (v) of the Act are as follows:

- (i) when misbehavior or other wrongful actions are performed in taking the license examination; and
- (ii) when the person has transferred or lent the license to other persons.

(Issuance of License)

Article 66-2 (1) The license is to be granted by issuing a license (Form No. 11). In this case, when two or more types of licenses are granted to a person on the same day, matters related to the other types of license are to be entered into

the license for one type of license in lieu of issuing the license for other types of licenses.

- (2) When the license for a different type of license is to be granted to a person who has already been granted a license, matters related to the previously granted license (excluding the matters pertaining to the lower qualifications than those of the license to be newly issued if the license for lower qualification is included in the existing license) are to be entered into the new license and issued by replacing the previous license.
- (3) When a person who already has a crane or derrick operator's license limiting the type of machine allowed to operate pursuant to the provisions of Article 224-4, paragraph (1) of the Crane Ordinance to floor-driving cranes is to be granted a crane or derrick operator's license that does not limit the type of machine allowed to operate or a crane or derrick operator's license limiting the type of machine allowed to operate to cranes pursuant to the provisions of paragraph (2) of the same Article, or when a person who already has a crane or derrick operator's license limiting the type of machine allowed to operate pursuant to the provisions of the same paragraph to cranes is to be granted a crane or derrick operator's license that does not limit the type of machine allowed to operate, a license for a crane or derrick operator's license is to be issued in exchange for the license the person already possessed. In this case, when the person already has a license other than the crane or derrick operator's license, matters related to the license that the person already possessed are to be entered into the license for the crane or derrick operator's license.

(Application Procedures for Obtaining License)

- Article 66-3 (1) A person who has passed the license examination and is to receive a license (excluding a person who falls under the following paragraph) must submit a written license application (Form No. 12) to the Director of the Prefectural Labour Bureau which has conducted the license examination without delay, after having passed the license examination.
- (2) A person who has passed the license examination conducted by the designated examining body set forth in Article 75-2 of the Act (hereinafter referred to as "the designated examining body") and is to receive the license must submit a written license application set forth in the preceding paragraph together with the document prescribed in Article 71-2 to the Director of the Prefectural Labour Bureau that has jurisdiction over the location of the office of the designated examining body without delay, after having passed the license examination.
 - (3) A person other than the person who has passed the license examination who seeks to receive a license must submit a written license application set forth in

paragraph (1) to the Director of the Prefectural Labour Bureau that has jurisdiction over the area where the person resides.

(Reissuance or Renewal of the License)

Article 67 (1) A person who has been issued the license and is actually engaging in or seeks to engage in the work related to the license, when having lost or damaged the license, must submit a written application for reissuance of the license (Form No. 12) to the Director of the Prefectural Labour Bureau that issued the license or to the Director of the Prefectural Labour Bureau that has jurisdiction over the area where the person resides and have the license reissued.

(2) A person prescribed in the preceding paragraph, when having changed their permanent address or name, must submit a written application for renewal of the license (Form No. 12) to the Director of the Prefectural Labour Bureau that issued the license or to the Director of the Prefectural Labour Bureau that has jurisdiction over the area where the person resides and have the license renewed.

(Return of the License)

Article 68 (1) A person who has received a disposition of license revocation pursuant to the provisions of Article 74 of the Act must return the license without delay to the Director of the Prefectural Labour Bureau that has revoked the license.

(2) The Director of the Prefectural Labour Bureau that has received the license returned pursuant to the provisions of the preceding paragraph, when matters related to the license other than that revoked are stated on the license, is to delete the matters related to the revoked license and reissue the license.

(License Examination)

Article 69 The classification of the license examinations prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 75, paragraph (1) of the Act is as follows:

- (i) license examination for class-1 health supervisor;
- (i)-2 license examination for class-2 health supervisor;
- (ii) license examination for operations chief of work in pressurized chamber;
- (iii) license examination for operations chief of gas welding;
- (iv) license examination for operations chief of forestry cableway;
- (v) License examination for special class boiler expert;
- (vi) license examination for class-1 boiler expert;
- (vii) license examination for class-2 boiler expert;
- (viii) license examination for operations chief of radiography with X-rays;

- (viii)-2 license examination for operations chief of radiography with gamma-rays;
- (ix) license examination for blasting operator;
- (x) license examination for cargo lifting appliance operator;
- (xi) license examination for special class boiler welder;
- (xii) license examination for ordinary class boiler welder;
- (xiii) license examination for boiler maintenance technician;
- (xiv) license examination for crane or derrick operator;
- (xv) license examination for mobile crane operator; and
- (xvi) license examination for marine diver.

(Eligibility for Examination and Examination Subjects)

Article 70 The eligibility for examination and the examination subjects of license examinations set forth in item (i), item (i)-2, item (iii), item (iv), item (ix) and item (x) of the preceding Article, and a person who is exempt from a number of the subjects of the license examination and the subjects to be exempted pursuant to the provisions of Article 75, paragraph (3) of the Act are as prescribed in the Appended Table 5.

(Procedures for Taking Examination)

Article 71 A person who seeks to take the license examination must submit a written application for license examination (Form No. 14) to the Director of the Prefectural Labour Bureau (to a designated examining body for a person who seeks to take a license examination that the designated examining body conducts).

(Notice of Passing the Examination)

Article 71-2 The Director of the Prefectural Labour Bureau or the designated examining body is to notify in writing a person who has passed the license examination of that fact.

(Details of the License Examination)

Article 72 Beyond what is set forth in the preceding three Articles, the necessary matters for conducting the license examination listed in Article 69, item (i), item (i)-2, item (iii), item (iv), item (ix) and item (x) are specified by the Minister of Health, Labour and Welfare.

Section 2 Practical Training

Article 73 Deleted

(Training Subjects)

Article 74 The training subjects of the cargo lifting appliance operation practical training course are as follows:

- (i) basic operation of cargo lifting appliance;
- (ii) applied operation of cargo lifting appliance; and
- (iii) basic operation of signals.

(Procedures for Receiving Practical Training)

Article 75 A person who seeks to receive the practical training set forth in Article 75, paragraph (3) of the Act (hereinafter referred to as "practical training") must submit a written application using Form No. 15 to a registered training institution set forth in Article 77, paragraph (3) of the Act where the training is provided (hereinafter referred to as the "registered training institution").

(Issuance of Practical Training Completion Certificate)

Article 76 The registered training institution that has provided the practical training must issue without delay, a practical training completion certificate (Form No. 16) to a person who has completed the training.

(Details of the Practical Training)

Article 77 Beyond what is set forth in the preceding three Articles, necessary matters for conducting a cargo lifting appliance operation practical training course are specified by the Minister of Health, Labour and Welfare.

Section 3 Skills Training Course

Article 78 Deleted

(Qualifications for Taking Skills Training Courses and Training Subjects)

Article 79 The eligibility for taking the skills training courses and training subjects listed in the Appended Table 18, items (1) through (17) and items (28) through (35) of the Act are as prescribed in the Appended Table 6 of the Act.

(Procedures for Receiving Training)

Article 80 A person who seeks to take the skills training course must submit written application for taking the skills training course (Form No. 15) to the registered training institution that is to conduct the training course.

(Issuance of the Skills Training Course Completion Certificate)

Article 81 The registered training institution that has conducted the skills

training course must issue a skills training course completion certificate (Form No. 17) without delay to a person who has completed the skills training course.

(Reissuance of the Skills Training Course Completion Certificate)

- Article 82 (1) A person who has received a skills training course completion certificate and is actually engaging or seeks to engage in the work pertaining to the skills training must, when the person loses or damages the certificate except for the case prescribed in paragraph (3) below, submit a written application for reissuance of the skills training course completion certificate (Form No. 18) to the registered training institution that issued the certificate, and have the skills training course completion certificate reissued.
- (2) A person prescribed in the preceding paragraph, when the person has changed their permanent address or name, must submit a written application for renewal of the skills training course completion certificate (Form No. 18) to the registered training institution that issued the certificate, and have the certificate renewed excluding the case prescribed in paragraph (3).
- (3) The person prescribed in paragraph (1), when the registered training institution that issued the certificate has discontinued the training service (including the case their registration has been cancelled or become invalid) and is prescribed in the proviso of Article 24, paragraph (1) of the Ordinance on Registered Inspection Agency, etc. (Order of the Ministry of Labour No. 44 of 1972), and when the person has lost or damaged the certificate or changed their permanent address or name, must submit a written application for the reissuance of the skills training course completion certificate (Form No. 18) to the institution designated by the Minister of Health, Labour and Welfare as prescribed in the proviso of the same paragraph, and have a document that certifies completion of the skills training course issued.
- (4) In the case referred to in the preceding paragraph, when the person who submitted application for the issuance of the certificate set forth in the same paragraph has completed a skills training course other than those prescribed by the same paragraph, the institution designated by the Minister of Health, Labour and Welfare may issue the document set forth in the same paragraph by stating that the person completed the skills training course, upon receiving information pertaining to the person's completion of the skills training course from the registered training institution that provided the skills training course.

(Application of Provisions When Director of Prefectural Labour Bureau Provides Service Related to Skill Training Courses)

Article 82-2 In applying the provision of the preceding three Articles when the Director of the Prefectural Labour Bureau provides all or part of the service related to the skills training courses pursuant to the provisions of Article 53-2,

paragraph (1) of the Act as applied mutatis mutandis pursuant to Article 77, paragraph (3) of the Act, the term "the registered training institution" in Articles 80 and 81 and paragraph (1) and (2) of the preceding Article is deemed to be replaced with "the Director of the Prefectural Labour Bureau or the registered training institution."

(Details of Skills Training Courses)

Article 83 Beyond what is set forth in Article 79 to the preceding Article, necessary matters for conducting the skills training courses listed in the Appended Table 18, items (1) through (17) and items (28) through (35) of the Act are specified by the Minister of Health, Labour and Welfare.

Chapter VIII Safety and Health Improvement Plan

Article 84 The instructions pursuant to the provisions of Article 78, paragraph (1) of the Act are to be given by the Director of the competent Prefectural Labour Bureau through a written instruction for formulating safety and health improvement plan (Form No. 19).

Chapter IX Supervision

(Temporary Buildings Not Requiring a Notification of the Plan)

Article 84-2 Temporary buildings or machines, etc., prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (1) of the Act are to be the following buildings or machines, etc., to be demolished within a period of less than six months (those within a period of less than 60 days from assembling to dismantling for temporary passages, suspended scaffolds or overhang scaffolds having a height and length of 10 m or more respectively, or scaffolds having a height of 10 m or more):

- (i) buildings in which machines equipped with motors having a total rated power output of less than 2.2 kilowatts are to be installed;
- (ii) machines equipped with motors having a rated power output of less than 1.5 kilowatts (excluding special machines, etc., set forth in Article 37, paragraph (1) of the Act; the same applies in the following item and Article 89, item (i)); and
- (iii) buildings or machines, etc., that are not used for the services listed in the Appended Table 6-2.

(Notification of the Plan)

Article 85 (1) A person who seeks to make the notification pursuant to the provisions of Article 88, paragraph (1) of the Act must submit the written

notification using Form No. 20 to the Chief of the competent Labour Standards Inspection Office by attaching the following documents:

- (i) drawings showing the situation of the surroundings of the workplace and the relationship between the workplace and the surrounding areas;
 - (ii) drawings showing the arrangement of buildings and the main machines within the site;
 - (iii) documents stating the outlines of the method of operation such as handling or manufacturing of raw materials or products, etc.;
 - (iv) documents or drawings indicating the floor plans and sectional plans for each floor of the building (limited to the building where the work set forth in the preceding item is carried out) and the arrangement and outline of the main machines on the respective floors; and
 - (v) documents or drawings showing the outline of the methods or equipment designed to prevent industrial accidents in the building set forth in the preceding item and in other workshops.
- (2) When a part of a building or machine, etc., is to be installed, relocated, or altered, it would be sufficient if the notification pursuant to the provisions of the preceding paragraph is submitted only for that part.

Article 86 (1) When the employer who seeks to install or relocate the machines, etc., listed in the right column of the Appended Table 7 or to alter their main structure is to submit the notification pursuant to the provisions of Article 88, paragraph (1) of the Act, the employer must submit the notification using Form No. 20 to the Chief of the competent Labour Standards Inspection Office by attaching the document stating the matters listed in the middle column of the same Table in accordance with the type of machines, etc., and drawings listed in the right column of the same Table.

(2) When submitting a notification pursuant to the provisions of the preceding paragraph, the provisions of paragraph (1) of the preceding Article are applied as follows:

- (i) when submitting a notification on machines listed in the left column of the Appended Table 7 together with buildings or other machines, etc., pursuant to the provisions of Article 88, paragraph (1) of the Act, it is not required to state the overlapping parts of the matters to state in the notification, documents or drawings prescribed in the preceding paragraph among the matters to state in the notification and documents prescribed in paragraph (1) of the preceding Article; and
- (ii) when submitting a notification pursuant to the provisions of Article 88, paragraph (1) of the Act only for machines, etc., listed in the left column of the Appended Table 7, the provisions of paragraph (1) of the preceding Article are not applicable.

(3) A notification pursuant to the provisions of Article 88, paragraph (1) of the Act is not required for the installation of machines, etc., listed in the left column of the Appended Table 7, items (16) through (20) (hereinafter referred to as "specified chemical facilities, etc.") by the person who filed an application pursuant to the provisions of Article 49, paragraph (1) of the Ordinance on Prevention of Hazards Due to Specified Chemical Substances (Order of the Ministry of Labour No. 39 of 1972; hereinafter referred to as the "Specified Chemical Ordinance").

(Measures Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in the Proviso of Article 88, Paragraph (1) of the Act)

Article 87 The measures prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in the proviso of Article 88, paragraph (1) of the Act (including as applied mutatis mutandis pursuant to Article 88, paragraph (2)) are the following measures:

- (i) investigation of the danger or harm, etc., set forth in Article 28-2, paragraph (1) of the Act, and measures to be taken based on the results of the investigation; and
- (ii) beyond what is set forth in the preceding item, voluntary activities to be implemented by the employer in accordance with the guidelines set forth in Article 24-2.

(Unit of Accreditation)

Article 87-2 The accreditation pursuant to the provisions of the proviso of Article 88, paragraph (1) of the Act (including as applied mutatis mutandis pursuant to paragraph (2) of the same Article) (hereinafter referred to as "accreditation" in the following Article to Article 87-10) is to be made for each workplace by the Chief of the competent Labour Standards Inspection Office.

(Disqualification Clause)

Article 87-3 A person who falls under any of the following cases may not obtain the accreditation:

- (i) a person who has violated the provisions of the Act or orders based on the Act (limited to those pertaining to the workplace for which the accreditation is sought), has been sentenced to a penalty heavier than a fine, and for whom two years have not elapsed since the date when the execution of the sentence was completed or the date when the person ceased to be subject to the execution of the sentence;
- (ii) a person whose accreditation was revoked pursuant to the provisions of Article 87-9 for the workplace the person sought accreditation, and for whom two years have not elapsed since the date of revocation; or

- (iii) a corporation that has an officer who falls under either of the preceding two items.

(Accreditation Standards)

Article 87-4 The Chief of the competent Labour Standards Inspection Office must give the accreditation when a workplace seeking to obtain the accreditation conforms to all of the following requirements:

- (i) the workplace is properly carrying out the measures prescribed in Article 87;
- (ii) the occurrence rate of industrial accidents is found to be lower than the average occurrence rate in the type of business to which the workplace belongs; and
- (iii) industrial accidents in which workers have died or other serious industrial accidents have not occurred during the year preceding the application date.

(Application for Accreditation)

Article 87-5 (1) The employer who seeks to apply for accreditation must submit a written application for accreditation of exemption from notification of plan (Form No. 20-2) for each workplace together with the following documents to the Chief of the competent Labour Standards Inspection Office:

- (i) a document explaining that the employer does not fall under any of the cases listed in each item of Article 87-3;
 - (ii) a document certifying that the implementation status of the measures pursuant to Article 87 has been evaluated by two or more persons well versed in safety or health within three months before the application date, and a document stating the outline of the evaluation;
 - (iii) a document certifying that the evaluation set forth in the preceding item has been audited by one or more persons well versed in safety and one or more persons well versed in health; and
 - (iv) a document certifying that the workplace meets the requirements listed in items (ii) and (iii) of the preceding Article (a written application on the fact when the document is not available).
- (2) A person who is well versed in safety set forth in item (ii) and (iii) of the preceding paragraph means the person who falls under any of the following item and who does not have interests in providing the accreditation:
- (i) a person who has experience of having been engaged in work as an industrial safety consultant for three years or longer, and has conducted three or more evaluations on the implementation status of voluntary activities conducted by the employer in line with the guidelines set forth in Article 24-2; or
 - (ii) a person who is found to have the ability equivalent to or greater than that

of the person listed in the preceding item.

(3) A person who is well versed in health set forth in paragraph (1), items (ii) and (iii) means the person who falls under any of the following item and who does not have interests in providing the accreditation:

(i) a person who has experience of having been engaged in work as an industrial health consultant for three years or longer, and who has conducted three or more evaluations on the implementation status of voluntary activities conducted by the employer in line with the guidelines set forth in Article 24-2; or

(ii) a person who is found to have the ability equivalent to or greater than that of the person listed in the preceding item.

(4) The Chief of the competent Labour Standards Inspection Office, when they have provided the accreditation, is to issue a certificate using Form No. 20-3.

Article 87-6 (1) Unless the accreditation is renewed every three years, it ceases to be effective after a lapse of the period.

(2) The provisions of Article 87-3, Article 87-4 and paragraphs (1) through (3) of the preceding Article apply mutatis mutandis to the renewal of accreditation pursuant to the preceding paragraph.

(Report on the Implementation Status)

Article 87-7 The employer who obtained the accreditation must submit a report on the implementation status (Form No. 20-4) to the Chief of the competent Labour Standards Inspection Office together with a document stating the results of an audit conducted on the implementation status of measures set forth in Article 87 for each workplace pertaining to the accreditation (hereinafter referred to as the "accredited workplace" in the following Article) once every period not exceeding a year.

(Suspension of Measures)

Article 87-8 The employer who obtained accreditation, when they have discontinued taking the measures set forth in Article 87 at the accredited workplace, must submit a notification of the fact to the Chief of the competent Labour Standards Inspection Office without delay.

(Revocation of Accreditation)

Article 87-9 The Chief of the competent Labour Standards Inspection Office may revoke the accreditation when the employer who has obtained the accreditation comes to fall under any of the following items:

(i) when Article 87-3, item (i) or (iii) becomes applicable to the employer;

(ii) when the employer is found not to conform to Article 87-4, item (i) or (ii);

- (iii) when an industrial accident listed in Article 87-4, item (iii) has occurred;
- (iv) when the employer has failed to submit the report and document specified in Article 87-7 in violation of the provisions of the Article or submitted them by entering a false statement; or
- (v) when the employer obtained or renewed the accreditation by wrongful means.

(Special Provisions for the Construction Industry)

Article 87-10 (1) Notwithstanding the provision of Article 87-2, as regards the employer who engages in work that is part of the construction industry, accreditation is to be given for each workplace where the service contract for the work is concluded.

(2) As regards the application of provisions listed in the left column of the following Table concerning the accreditation set forth in the preceding paragraph, the terms listed in the middle column of the Table are deemed to be replaced with the terms listed in the right column.

Article 87-3, item (i)	Workplace	Workplace where the service contract pertaining to the work of undertaking of the construction industry is concluded and workplace where the work pertaining to the service contract concluded in the workplace is conducted (hereinafter referred to as the "site, etc.")
Article 87-4	Workplace	Site, etc.
	The type of industry to which the workplace belongs	Construction industry
Article 87-7	Workplace pertaining to accreditation (hereinafter referred to as the "accredited workplace" in the following Article)	Site, etc. pertaining to accreditation
Article 87-8	Accredited workplace	Site, etc. pertaining to accreditation

(Machines Subject to Notification of the Plan)

Article 88 (1) Machine, etc., prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (2) of the Act is to be machine, etc., listed in the left column of Appended Table 7 (limited to the radiation apparatus for machine, etc., listed in the left column of item (21) of the same Table), in addition to what is prescribed by other orders based on

laws.

- (2) The provisions of Article 86, paragraph (1) apply mutatis mutandis to the case of submitting the notification pursuant to the provisions of Article 88, paragraph (1) of the Act as applied mutatis mutandis pursuant to paragraph (2) of the same Article on the machine, etc., listed in the left column of the Appended Table 7.
- (3) A notification pursuant to the provisions of Article 88, paragraph (1) of the Act as applied mutatis mutandis pursuant to paragraph (2) of the same Article is considered not to be required for the installation of specified chemical equipment, etc., by a person who has made the application pursuant to the provisions of Article 49, paragraph (1) of the Specified Chemical Ordinance.

Article 89 Temporary machines, etc., prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (1) of the Act as applied mutatis mutandis pursuant to paragraph (2) of the same Article are to be as follows:

- (i) machine, etc., other than a skyline logging cable cranes, logging cableways (meaning those consisting of cables, carriers, supporting poles and other items thereto and designed to carry logs or fuelwood for a certain distance in the air; the same applies hereinafter), temporary passages and scaffoldings (excluding concrete form shoring set forth in Article 6, item (xiv) of the Order; hereinafter referred to as "concrete form shoring") that are to be removed within six months; and
- (ii) skyline logging cable cranes, logging cableways, makeshift passages, or scaffoldings, which are to be disassembled within 60 days after the commencement of assembling.

(Scope of Work)

Article 89-2 The work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (3) of the Act is to be as follows:

- (i) the construction work of a tower with a height of 300 m or more;
- (ii) the construction work of a dam with a vertical height (meaning the height between the foundation and the top) of 150 m or more;
- (iii) the construction work of a bridge with a maximum span of 500 m or more (1,000 m or more for a suspension bridge);
- (iv) the construction work of tunnels, etc., with a length of 3,000 m or more;
- (v) the construction work of tunnels, etc., with a length of 1,000 m or longer and shorter than 3,000 m where the depth of vertical shaft is 50 m or more (limited to those used for passages); and
- (vi) the work involving operations using the compressed air method under a gauge pressure of 0.3 MPa or more.

- Article 90 The work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (4) of the Act is to be as follows:
- (i) the work related to the construction, modification, dismantling or demolition (hereinafter referred to as the "construction, etc.") of a building or a structure exceeding 31 m in height (excluding bridges);
 - (ii) the work related to the construction, etc., of bridges with a maximum span of 50 m or more;
 - (ii)-2 the work related to the construction, etc., of bridge superstructures with a maximum span of 30 m or more and less than 50 m (limited to the work carried out in places set forth in the provisions of Article 18-2);
 - (iii) the work related to the construction, etc., of tunnels (excluding tunnels into which workers do not enter);
 - (iv) the work related to excavation of natural ground with excavation height or depth of 10 m or more (excluding excavation of tunnels and for mining; the same applies hereinafter) (excluding work utilizing excavating machines but not requiring workers to enter under the excavation surface);
 - (v) the work involving operations using compressed air methods;
 - (v)-2 the work involving the removal of asbestos, etc. (meaning the asbestos, etc., prescribed by Article 2 of the Asbestos Ordinance; the same applies hereinafter) from the part on which asbestos are sprayed in fire-resistant buildings prescribed in Article 2, item (ix)-2 of the Building Standards Act (Act No. 201 of 1950) (hereinafter referred to as "fire-resistant buildings" in Article 293) or semi-fire-resistant buildings prescribed in Article 2, item (ix)-3 of the same Act (hereinafter referred to as "semi-fire-resistant buildings" in Article 293);
 - (v)-3 the work involving the dismantling, etc., of facilities such as waste incinerators or dust collectors, etc., installed in the waste incineration facilities that have the waste incinerator listed in the Appended Table 1, item (5) of the Enforcement Order of the Act on Special Measures for Prevention of Dioxin, etc. (limited to the waste incinerator for which the grate area is 2 m² or more and the incineration capability is 200 kg/h or more);
 - (vi) the work related to excavation for quarrying with the excavation height or depth of 10 m or more; and
 - (vii) the work related to excavation for quarrying using the underground excavation method.

(Notification of the Plan Pertaining to the Construction Industry)

Article 91 (1) A person who seeks to make a notification on the work related to the construction industry pursuant to the provisions of Article 88, paragraph

(3) of the Act must submit the notification in Form No. 21 to the Minister of Health, Labour and Welfare together with the following documents and a compressed air work statement (Form No. 21-2) for the work pertaining to the work carried out by compressed air construction method; provided, however, that in submitting a compressed air work statement, it is not required to enter the matters to be stated in the following documents overlapping with those in the compressed air work statement:

- (i) drawings showing the situation of the surroundings of the place work is carried out and the relationship between that place and the surrounding areas;
 - (ii) drawings indicating the outline of buildings, etc., which the person seeks to construct;
 - (iii) drawings showing the arrangement of machines, equipment, buildings, etc., used for the construction work;
 - (iv) document or drawings indicating the outline of the construction method;
 - (v) documents or drawings indicating the outline of methods and equipment designed to prevent industrial accidents; and
 - (vi) operation schedule.
- (2) The provisions of the preceding paragraph apply mutatis mutandis to the notification pursuant to the provisions of Article 88, paragraph (4) of the Act. In this case the term "Minister of Health, Labour and Welfare" is deemed to be replaced with "Chief of the competent Labour Standards Inspection Office."

(Notification of the Plan Pertaining to the Quarrying Industry)

Article 92 A person who seeks to make a notification on the work related to the quarrying industry pursuant to the provisions of Article 88, paragraph (4) of the Act must submit the notification using Form No. 21 to the Chief of the competent Labour Standards Inspection Office together with the following documents:

- (i) drawings showing the situation of the surroundings of the place work is carried out and the relationship between that place and the surrounding areas;
- (ii) drawings showing the arrangement of machines, equipment, buildings, etc.;
- (iii) document or drawings indicating the method of quarrying; and
- (iv) documents or drawings indicating the method and outline of equipment designed to prevent industrial accidents.

(Scope of Construction or Work Pertaining to the Participation of Persons Who Have Qualifications)

Article 92-2 (1) The construction prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (5) of the Act is

to be the construction work for installing, or removing the machine, etc. listed in the left column of the Appended Table 7, items (10) and (12) or altering their main structure.

- (2) The work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (5) of the Act is to be the work listed in Article 90, items (i) through (v) (limited to construction work, for work listed in items (i) through (iii) of the same Article).

(Qualifications for Persons Participating in the Formulation of Plans)

Article 92-3 A person who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 88, paragraph (5) of the Act is to be a person listed in the right column of the Appended Table 9 in accordance with the classification of construction or work listed in the left column of the same Table.

(Investigation of Technical Aspects)

Article 93 The Minister of Health, Labour and Welfare, when asking opinions of persons with relevant expertise pursuant to the provisions of Article 89, paragraph (2) of the Act, is to designate members of an investigation committee from persons who are stated in the list of the names of candidates for the investigation committee members set forth in the following Article, in accordance with the content of the investigation,.

(List of the Names of Candidates for the Investigation Committee Members)

Article 94 The Minister of Health, Labour and Welfare is to commission persons who have advanced expert knowledge on safety and health to be candidates for the investigation committee members, create a list of the names of candidates for the investigation committee members, and publicize the list.

(Scope of the Plans)

Article 94-2 The plans prescribed by the Order of the Ministry of Health, Labour and Welfare set forth Article 89-2, in paragraph (1) of the Act are to be plans for the following work:

- (i) the work of constructing buildings of 100 m or more in height falling under any of following sub-items:
 - (a) the work that is carried out in the vicinity of underground installations or other underground structures (hereinafter referred to as "underground installation, etc." in Part II, Chapter VI, Section 1 and Article 634-2); or
 - (b) the building is unique such as its shape being cylindrical;
- (ii) the work of constructing a dam with banks of 100 m or more in height using a vehicle type construction machine (meaning construction machines

- equipped with power-driven system and capable of self-propelling to unspecified places among those listed in the Appended Table 7 of the Order; the same applies hereinafter) on slopes where the vehicle is likely to overturn or fall;
- (iii) the work of constructing bridges with a maximum span of 300 m or more and falling under any of the following sub-items:
 - (a) the girders of the bridge are curved; or
 - (b) the height beneath the girders of the bridge is 30 m or more;
 - (iv) the work of constructing tunnels, etc., of 1,000 m or more in length and are found to have a risk of endangering workers due to cave-ins, inundations or gas explosions;
 - (v) the work of excavation in which the volume of excavated soil exceeds 200,000 m³ and falling under any of following sub-items:
 - (a) the work is carried out in a place of weak soil; or
 - (b) the work is carried out in a confined place using vehicle type construction machines;
 - (vi) the work is performed by the compressed air method with the gauge pressure of 0.2 MPa or more and falls under any of the following sub-items:
 - (a) the work is carried out in a place of weak soil;
 - (b) excavating work is carried out at the same time in the vicinity of the place the work is performed.

(Exclusion from Investigation)

Article 94-3 The plans prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in the proviso of Article 89-2, paragraph (1) of the Act are to be the plans of the work related to construction industry projects ordered by the national government or local governments and other public organizations as the original orderer prescribed in Article 30, paragraph (2) of the Act.

(Investigations of Technical Aspects)

Article 94-4 The provisions of Article 93 and Article 94 apply mutatis mutandis to the investigation set forth in Article 89-2, paragraph (1) of the Act. In this case, the term "Article 89, paragraph (2) of the Act" in Article 93 is deemed to be replaced with "Article 89, paragraph (2) of the Act as applied mutatis mutandis pursuant to Article 89-2, paragraph (2)."

(Chief of the Labour Standards Inspection Office and Labour Standards Inspector)

Article 95 (1) In addition to what is prescribed by the orders based on the Act, the Chief of the Labour Standards Inspection Office takes charge of affairs related to the implementation of the Act under the instruction and supervision

of the Director of the Prefectural Labour Bureau.

- (2) The Labour Standards Inspector takes charge of on-site inspections pursuant to the Act, duties of juridical police personnel and other affairs related to the implementation of the Act.
- (3) The identification card set forth in Article 91, paragraph (3) of the Act is to be made using Form No. 18 of the Order for Enforcement of the Labour Standards Act.

(Term of Office of a Medical Advisor in Industrial Health)

Article 95-2 (1) The term of office of a medical advisor in industrial health is two years.

- (2) When the term of office of a medical advisor in industrial health has expired, the medical advisor in industrial health is to perform their duties until a successor is appointed.

(Identification Card for Employees Who Conduct On-site Inspections)

Article 95-3 The identification card set forth in Article 91, paragraph (3) of the Act as applied mutatis mutandis pursuant to Article 96, paragraph (5) of the Act is to be made using Form No. 21-2-2.

Article 95-3-2 The identification card set forth in Article 91, paragraph (3) of the Act as applied mutatis mutandis pursuant to Article 96-2, paragraph (5) of the Act is to be made using Form No. 21-2-3.

(Training for Persons Engaged in Work to Prevent Industrial Accidents)

Article 95-4 (1) The subjects for training set forth in Article 99-2, paragraph (1) of the Act (hereinafter simply referred to as "training" in this Article) are to be the following subjects:

- (i) problems and countermeasures pertaining to the supervision of workplace safety and health;
 - (ii) method of supervising workplace safety and health;
 - (iii) related laws and regulations on safety and health; and
 - (iv) case examples of industrial accidents and their preventive measures.
- (2) A person who seeks to undergo the training must submit a written application for the training on the prevention of the recurrence of industrial accidents for persons engaged in work to prevent industrial accidents (Form No. 21-3) to a person conducting the training designated by the Director of the Prefectural Labour Bureau under the provisions of Article 99-2, paragraph (1) of the Act (referred to as the "designated training institution" in the following paragraph).
 - (3) The designated training institution must issue a person who has completed the training with a completion certificate of training on the prevention of the

recurrence of industrial accidents for persons engaged in work to prevent industrial accidents (Form No. 21-4) without delay.

- (4) Beyond what is set forth in the preceding three paragraphs, necessary matters for conducting the training are specified by the Minister of Health, Labour and Welfare.

(Training for Persons Engaged in Work with Restrictions)

Article 95-5 (1) The subjects for training set forth in Article 99-3, paragraph (1) of the Act (hereinafter simply referred to as "training" in this Article) are to be the following subjects:

- (i) the structure of machine, equipment, etc., pertaining to work prescribed in Article 61, paragraph (1) of the Act (hereinafter referred to as "machines, etc. for work with restrictions").
- (ii) the function of safety device, etc., pertaining to machines, etc. for work with restrictions;
- (iii) the maintenance of machines, etc. for work with restrictions;
- (iv) work method pertaining to machines, etc. for work with restrictions;
- (v) related laws and regulations on safety and health; and
- (vi) case examples of industrial accidents and their preventive measures.

- (2) A person who seeks to undergo the training must submit a written application for training on the prevention of the recurrence of industrial accidents for persons engaged in work with restrictions (Form No. 21-5) to a person conducting training designated by the Director of the Prefectural Labour Bureau set forth in Article 99-3, paragraph (1) of the Act (referred to as the "designated training institution" in the following paragraph).

- (3) The designated training institution must issue a person who has completed the training with a completion certificate of training on the prevention of the recurrence of industrial accidents for persons engaged in work with restrictions (Form No. 21-6) without delay.

- (4) Beyond what is set forth in the preceding three paragraphs, necessary matters for conducting the training are specified by the Minister of Health, Labour and Welfare.

(Report on Work Exposed to Harmful Substances)

Article 95-6 When the employer has workers engage in the work that is liable to expose workers to gas, vapor or dust at a workshop where the substances which have a risk of causing health impairment to workers and specified by the Minister of Health, Labour and Welfare are manufactured or handled, the employer must submit a report using Form No. 21-7 on the necessary matters for preventing exposure to the substances to the Chief of the competent Labour Standards Inspection Office, as specified by the Minister of Health, Labour and

Welfare.

(Reports on Accidents)

Article 96 (1) In the following cases, the employer must submit a report using Form No. 22 to the Chief of the competent Labour Standards Inspection Office, without delay:

- (i) when any of the following accidents have occurred in the workplace or in any attached buildings:
 - (a) fire or explosion (excluding the accidents set forth in the following item);
 - (b) rupture of a centrifugal machine, or a grinding wheel and other high speed rotating body;
 - (c) disconnection of ropes or chains of skyline logging cable cranes, hoisting equipment or cableways;
 - (d) collapse of a building, construction attached thereto, or a skyline logging cable crane, chimney, overhead tank, etc.;
- (ii) when an accident involving the rupture of a boiler set forth in Article 1, item (iii) of the Order (excluding small-sized boilers) and the explosion of flue gas, or an accident equivalent to them has occurred.
- (iii) when an accident involving the rupture of a small-sized boiler, a class-1 pressure vessel set forth in Article 1, item (v) of the Order or a class-2 pressure vessel set forth in item (vii) of the same Article has occurred;
- (iv) when any of the following accidents involving a crane (excluding cranes listed in Article 2, item (i) of the Crane Ordinance) has occurred:
 - (a) runaway, collapse, falling or breaking of a jib; or
 - (b) disconnection of a wire rope or a hoisting chain;
- (v) when any of the following accidents involving a mobile crane (excluding mobile cranes listed in item (i) of Article 2 of the Crane Ordinance) has occurred:
 - (a) overturning, collapse, or breaking of a jib; or
 - (b) disconnection of a wire rope or a hoisting chain;
- (vi) when any of the following accidents involving a derrick (excluding derricks listed in Article 2, item (i) of the Crane Ordinance) has occurred:
 - (a) collapse, or breaking of a boom; or
 - (b) disconnection of a wire rope;
- (vii) when any of the following accidents involving an elevator (excluding elevators listed in Article 2, item (ii) of the Crane Ordinance) has occurred:
 - (a) collapse of an elevator step or falling of a load; or
 - (b) disconnection of a wire rope;
- (viii) when any of the following accident involving a construction lift (excluding construction lifts listed in Article 2, item (ii) of the Crane Ordinance) has occurred:

- (a) collapse of an elevator step or falling of a carrier; or
- (b) disconnection of a wire rope;
- (ix) when any of the following accidents involving a light capacity lift under the provisions of Article 1, item (ix) of the Order (excluding light capacity lifts listed in Article 2, item (ii) of the Crane Ordinance) has occurred:
 - (a) falling of a carrier; or
 - (b) disconnection of a wire rope or a hoisting chain; and
- (x) when any of the following accidents involving a gondola has occurred:
 - (a) runaway, overturning, falling or breaking of an arm; or
 - (b) disconnection of a wire rope.
- (2) When a report pursuant to the provisions of paragraph (1) of the following Article is to be submitted together with a report set forth in the preceding paragraph, it is not required to enter the matters to be stated in the report overlapping with the matters to be stated in the report under the provisions of paragraph (1) of the following Article .

(Reports of Worker Casualties)

- Article 97 (1) When a worker has died or taken absence from work due to industrial accident or injury, suffocation or acute poisoning during work, or within the workplace or building attached thereto, the employer must submit a report using Form No. 23 to the Chief of the competent Labour Standards Inspection Office without delay.
- (2) In the case referred to in the preceding paragraph, notwithstanding the provisions that paragraph, when the number of days a worker has taken absence from work is less than four days, the employer must submit a report using Form No. 24 on the fact to the Chief of the competent Labour Standards Inspection Office by the end of the following month of the last month of the respective quarterly periods of January through March, April through June, July through September and October through December.

(Reporting)

- Article 98 The Minister of Health, Labour and Welfare, the Director of the Prefectural Labour Bureau, or the Chief of the Labour Standards Inspection Office, when having an employer, workers or lenders of machine, etc., or buildings report necessary matters or when ordering them to make an appearance pursuant to the provisions of Article 100, paragraph (1) of the Act, is to notify the following matters:
- (i) reason for making a report or for ordering to make an appearance; and
 - (ii) matters to be heard when ordering to make an appearance.

(Methods of Disseminating Laws and Regulations)

Article 98-2 (1) The methods prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 101, paragraph (1) of the Act are to be the method listed in each item of Article 23, paragraph (3).

(2) The methods prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 101, paragraph (2) of the Act are to be the following methods:

(i) to display or place the notified matters in a readily visible location at each workshop where the substances pertaining to the notified matters are handled at all times;

(ii) to distribute a document to the worker handling substances pertaining to the notified matters; and

(iii) to record the notified matters on magnetic tapes, magnetic disks or other equivalent devices and to install in each workshop where substances pertaining to the notified matters are handled devices that enable workers who handle the substances to confirm the content of the record at any time.

(Reports of Results of Epidemiological Surveys to the Central Labour Standards Council)

Article 98-3 When having conducted an epidemiological survey set forth in Article 108-2, paragraph (1) of the Act based on the same paragraph, the Minister of Health, Labor and Welfare is to report the result of the survey to the Labour Policy Council within a year after the survey has been finished.

Chapter X Miscellaneous Provisions

(Number of Copies of Applications to Be Submitted)

Article 99 The written application for the permission, accreditation, inspection or examination, etc., (excluding the written application using Form No. 12) prescribed by the Act and the orders based on the Act must be submitted by the original copy and a copy of the written application.

(Voluntariness of Forms)

Article 100 Forms prescribed by the Orders of the Ministry based on the Act (excluding Form 3, Form 6, Form 11, Form 12, Form 21-2-2, Form 21-7, and Form 23, Form No. 3-2 of the Ordinance on Prevention of Organic Solvent Poisoning (Order of the Ministry of Labour No. 36 of 1972, hereinafter referred to as "Organic Solvent Ordinance"), Form No. 3 of the Ordinance on Prevention of Lead Poisoning (Order of the Ministry of Labour No. 37 of 1972, hereinafter referred to as "Lead Poisoning Ordinance"), Form No. 3 of the Ordinance on Prevention of Tetraalkyl Lead Poisoning (Order of the Ministry of Labour No. 38 of 1972, hereinafter referred to as "Tetraalkyl Lead Poisoning Ordinance"),

Form No. 3 of the Specified Chemical Ordinance, Form No. 2 of the Ordinance on Safety and Health of Work under High Pressure (Order of the Ministry of Labour No. 40 of 1972, hereinafter referred to as "High Pressure Work Ordinance"), Form No. 2 of the Regulation on Prevention of Ionizing Radiation Hazards (Order of the Ministry of Labour No. 41 of 1972, hereinafter referred to as "Ionizing Radiation Regulation"), and Form No. 3 of the Asbestos Order) prescribe the minimum necessary matters that should be stated, and does not prohibit the use of forms other than those forms.

Part II Safety Standards

Chapter I Prevention of Dangers Due to Machines

Section 1 General Standards

(Prevention of Dangers Due to a Prime Mover and a Rotating Shaft)

- Article 101 (1) The employer must provide an enclosure, a cover, a sleeve, an overbridge, etc., for a prime mover, a rotating shaft, a gear, a pulley, a belt, etc., of a machine which has a risk of endangering workers.
- (2) The employer must use the sunken head type or provide a cover for set-screws and other fixtures attached to a rotating shaft, a gear, a pulley, a flywheel, etc.
- (3) The employer must not use a protruded fastener for joining a belt.
- (4) The employer must provide a handrail with the height of 90 cm or more for the overbridge set forth in paragraph (1).
- (5) A worker must use an overbridge when the overbridge is provided.

(Prevention of Dangers Due to Cutting of a Belt)

Article 102 The employer must provide an enclosure under the belt for a belt that is located above a passage or a workplace and having a distance between pulleys of 3 m or more, width of 15 cm or more and speed of 10 m/sec or more.

(Power Cutting Device)

- Article 103 (1) The employer must provide a power cutting device for a switch, a clutch, or a belt shifter, etc., for each machine; provided, however, that this does not apply to a series of machines having a common power cutting device and not requiring manual supply or extraction of raw materials during the process of operation.
- (2) The employer must, when the machine set forth in the preceding paragraph is for the process of cutting, drawing, compressing, punching, bending or expressing, provide the power cutting device set forth in the same paragraph at a place where a person engaging in the processing work is able to operate it without leaving the work station.
- (3) The employer, as regards the power cutting device set forth in paragraph (1),

provide a device that can be easily operated and is not likely to unexpectedly activate due to contact, vibration, etc.

(Signals for Starting Operation)

Article 104 (1) In starting the operation of a machine, when there is a risk of endangering workers, the employer must set fixed signals, designate a person who gives the signals, and have the person give the signals to the workers.

(2) A worker must follow the signals set forth in the preceding paragraph.

(Prevention of Dangers Due to Workpieces that Come Flying)

Article 105 (1) When there is a risk of endangering workers due to cut or broken workpieces that come flying, the employer must provide a cover or an enclosure for the machine dispersing the workpieces; provided, however, that this does not apply if providing a cover or an enclosure is difficult due to the nature of the work, and when having workers use personal protective equipment.

(2) A worker, when having been ordered to use personal protective equipment in the case referred to in the proviso of the preceding paragraph, must use the equipment.

(Prevention of Dangers Due to Chips that Come Flying)

Article 106 (1) When there is a risk of endangering workers due to chips from machines that come flying, the employer must provide a cover or an enclosure for the machine generating the chips; provided, however, that this does not apply if providing a cover or an enclosure is difficult due to the nature of the work, and when having workers use personal protective equipment.

(2) A worker, when having been ordered to use personal protective equipment in the case referred to in the proviso of the preceding paragraph, must use the equipment.

(Suspension of Operation in the Case of Cleaning)

Article 107 (1) When work of cleaning, lubrication, inspection or repairing of a machine (excluding blade parts) are carried out, and when there is a risk of endangering workers, the employer must suspend the operation of the machine; provided, however, that this does not apply if work has to be carried out during operation, and when measures of providing a cover on dangerous part have been taken.

(2) When the employer has suspended the operation of the machine pursuant to the provisions of the preceding paragraph, the employer must take the measures of locking the starting device of the machine or attaching a plate, etc., to prevent persons other than the workers engaging in the work set forth in the same paragraph from operating the machine.

(Suspension of Operation in the Case of Cleaning Blade Parts)

Article 108 (1) When carrying out the work of cleaning, inspecting, repairing, replacing, or adjusting the blade parts of a machine, the employer must suspend the operation of the machine; provided, however, that this does not apply if doing so is not likely to endanger workers due to the structure of the machine.

(2) When the employer has suspended the operation of the machine pursuant to the provisions of the preceding paragraph, the employer must take the measures of locking the starting device of the machine and attaching a plate to prevent persons other than the workers engaging in the work set forth in the same paragraph from operating the machine.

(3) When removing chips or using cutting lubricants for the blade part of a machine during operation, the employer must have a worker use a brush or other appropriate tools.

(4) A worker, when having been ordered to use a tool set forth in the preceding paragraph, must use the tool.

(Prevention of Dangers Due to Wind-Up Roll)

Article 109 The employer must provide a cover or an enclosure, etc., for a wind-up roll or a coil of a paper, a cloth or a wire rope, etc., which has a risk of endangering the workers.

(Wearing of Work Caps)

Article 110 (1) When there is a risk of getting hair or clothing of a worker working caught in a power-driven machine, the employer must have the worker wear appropriate work cap or work clothes.

(2) A worker, when having been ordered to wear work cap or work clothes set forth in the preceding paragraph, must wear them.

(Prohibition of the Use of Gloves)

Article 111 (1) When there is a risk of getting fingers of the worker working caught in rotating blades of a drilling machine or a chamfering machine, the employer must not have the worker wear gloves.

(2) In the case referred to in the preceding paragraph, when a worker has been prohibited to wear gloves, the worker must not wear them.

Section 2 Machine Tools

(Cover on Stroke Ends)

Article 112 When the stroke ends of the ram of a shaper, a table of a grinding

machine or a planer, etc., has a risk of endangering workers, the employer must provide a cover, an enclosure or a railing.

(Cover on Workpieces Protruding from Machine Tools)

Article 113 When a rotating workpieces protruding from a vertical lath, a turret lath, etc., has a risk of endangering workers, the employer must provide a cover, an enclosure, etc.

(Cover on Teeth of a Band Saw)

Article 114 The employer must provide a cover or enclosure on the teeth of band saws (excluding woodworking band saws) other than the parts necessary for sawing and the band wheel.

(Preventive Device for Contact with Teeth of a Circular Saw)

Article 115 The employer must provide a preventive device for contact with teeth of circular saws, etc. (excluding woodworking circular saws).

(Prohibition of Riding on a Table of a Vertical Lathe)

Article 116 (1) The employer must not allow a worker to ride on a table of a vertical lathe or a planer during operation; provided, however, that this does not apply when a worker on the table or a worker placed at the operation panel is able to immediately stop the machine.

(2) A worker, excluding the case referred to in the proviso of the preceding paragraph, may not ride on a table of a vertical lathe, a planer, etc., during operation.

(Cover on Grinding Wheel)

Article 117 When a rotating grinding wheel has a risk of endangering workers, the employer must provide a cover; provided, however, that this does not apply to a grinding wheel with a diameter of less than 50 mm.

(Test Run of Grinding Wheel)

Article 118 As regards a grinding wheel, the employer must make a test run for one minute or longer before commencing the work for the day and for three minutes or longer when the grinding wheel has been replaced.

(Prohibition of Operation of a Grinding Wheel at a Speed Exceeding the Maximum Allowable Speed)

Article 119 As regards a grinding wheel, the employer must not operate the grinding wheel at a speed exceeding the maximum allowable speed.

(Prohibition of Use of Side Surfaces of a Grinding Wheel)

Article 120 The employer must not use the side surfaces of a grinding wheel except for a grinding wheel designed to use the side surfaces.

(Cover on a Buff)

Article 121 The employer must provide a cover on a buffing machine (excluding the buffing machine that use a cloth buff or a cork buff) other than the parts necessary for polishing.

Section 3 Wood Processing Machine

(Anti-Kickback Device for a Circular Saw)

Article 122 The employer must provide a spreader or other anti-kickback device, etc., for a woodworking circular saw (excluding a cross cut circular saw and other circular saws that do not have the risk of endangering workers due to kickback of the wood).

(Preventive Device for Contact with Teeth of a Circular Saw)

Article 123 The employer must provide a preventive device for contact with teeth of a woodworking circular saw (excluding a circular saw for lumber and that with an automatic feeding device).

(Cover on Teeth or Band Wheel of a Band Saw)

Article 124 The employer must provide a cover or an enclosure on the teeth of a woodworking band saw other than the parts necessary for sawing and a band wheel.

(Cover on Feeding Roller of a Band Saw)

Article 125 The employer must provide a preventive device for contact or a cover on a spiked or a toothed feeding roller of a woodworking band saw excluding the feeding side; provided, however, that this does not apply to those equipped with a quick stop device, which enables an operator to stop the operation of spiked or toothed feeding rollers.

(Preventive Device for Contact with a Blade of a Hand Feed Planer)

Article 126 The employer must provide a preventive device for contact with a blade of a hand feed planer.

(Preventive Device for Contact with Wood Shaper Blades)

Article 127 (1) The employer must provide a preventive device for contact with a wood shaper blade (excluding a wood shaper equipped with an automatic

feeding device); provided, however, that this does not apply when providing a preventive device for contact is difficult due to the nature of the work, and having a worker use a jig or a tool.

- (2) A worker, in the case referred to in the proviso of the preceding paragraph, and having been instructed to use a jig or a tool, must use the jig or the tool.

(Prohibition of Entry)

Article 128 (1) The employer must prohibit workers from entering the space between the teeth and the log carriage of an automatic log carriage type band saw and display a notice to that effect at a readily visible location.

- (2) A worker may not enter a place where entry is prohibited pursuant to the provisions of the preceding paragraph.

(Appointment of an Operations Chief of Wood Processing Machines)

Article 129 As regards the work set forth in Article 6, item (vi) of the Order, the employer must appoint an operations chief of wood processing machines from the persons who have completed the skills training course for operations chief of wood processing machines.

(Duties of the Operations Chief of Wood Processing Machines)

Article 130 The employer must have the operations chief of wood processing machines carry out the following matters:

- (i) to directly supervise the work of handling wood processing machines;
- (ii) to inspect the wood processing machine and its safety device;
- (iii) to take immediately necessary measures when having found any abnormality in the wood processing machine and its safety device; and
- (iv) to monitor the use of a jig or a tool during the operation.

Section 4 Press Machine and Shearing Machine

(Prevention of Dangers Due to Press Machines)

Article 131 (1) As regards a press machine and a shearing machine (hereinafter referred to as "press, etc."), the employer must take measures of providing a safety enclosure, etc., for preventing a part of a body of the worker carrying out the work using the press, etc., from going beyond the danger limit; provided, however, that this does not apply to press, etc., equipped with mechanism to prevent dangers due to the slide or the blade.

- (2) When it is difficult to comply with the provisions of the preceding paragraph due to the nature of the work, the employer must take such necessary measures as installing safety devices that conform to the requirements set forth in the following items, in order to secure the safety of a worker carrying

out the work using the press, etc.:

- (i) the safety device has the performance in accordance with the type of press, etc., pressure capability, strokes per minute, length of strokes, and the method of work; and
 - (ii) the safety device has the performance in accordance with the suspension performance of the press, etc., for a safety device with two-hand control system or with sensitive-response system.
- (3) The measures set forth in the preceding two paragraphs, as regards press, etc., equipped with a processing stage changeover switch, an operation changeover switch or an operation station changeover switch or a safety device changeover switch, must be taken in any condition when one of the switches is operated.

(Prevention of Dangers Due to Descent of a Slide)

Article 131-2 (1) When the work of fitting, replacing or adjusting the dies of a power press are carried out, and when a part of the body of the worker engaging in the work goes beyond the danger limit, the employer must have the worker take such measures as using a safety block, etc., in order to prevent the worker from dangers due to unexpected descent of the slide.

(2) The worker engaging in the work set forth in the preceding paragraph must take measures of using a safety block, etc., set forth in the same paragraph.

(Adjustment of a Die)

Article 131-3 When operating a slide for adjusting a die of a press machine, the employer must carry out the operations by inching for the press machine with an inching mechanism or by manually operating for a machine without an inching mechanism.

(Maintaining the Functions of Clutches)

Article 132 The employer must maintain the functions of a clutch, a brake and other devices necessary for controlling the press, etc., in effective conditions at all times.

(Appointment of an Operations Chief of Press Machines)

Article 133 As regards the work set forth in Article 6, item (vii) of the Order, the employer must appoint an operations chief of press machines from the persons who have completed the skills training course for operations chief of press machines.

(Duties of the Operations Chief of Press Machines)

Article 134 The employer must have the operations chief of press machines carry

out the following matters:

- (i) to inspect the press machine and its safety device;
- (ii) to immediately take necessary measures when having found any abnormality in the press machine and its safety device;
- (iii) To store the key when having equipped a press machine or its safety device with a changeover key switch; and
- (iv) to directly supervise the work of fitting, removing and adjusting a die.

(Storing the Key of a Changeover Key Switch)

Article 134-2 When work other than those set forth in Article 6, item (vii) of the Order among work using a power press are carried out, and a changeover key switch for the power press and its safety device have been provided, the employer must designate a person who stores the key switch, and have the person store the key.

(Periodical Self-inspections)

Article 134-3 (1) As regards a power press, the employer must carry out self-inspections for the following matters periodically once every period not exceeding a year; provided, however, that this does not apply to the non-use period of a power press which is not used for a period exceeding one year:

- (i) abnormalities in crankshafts, flywheels and other power transmission devices;
- (ii) abnormalities in a clutch, a brake and other controlling systems;
- (iii) abnormalities in an anti-repeat device, a quick-stop device or an emergency stop device;
- (iv) abnormalities in a slide, a connecting rod or other slide-related parts;
- (v) abnormalities in a magnet valve, a pressure control valve or other air pressure systems;
- (vi) abnormalities in a magnet valve, a hydraulic pump or other hydraulic systems;
- (vii) abnormalities in a limit switch, a relay or other electrical systems;
- (viii) abnormalities in a die cushion and its accessories; and
- (ix) abnormalities in the mechanism for preventing dangers due to a slide.

(2) As regards the power press set forth in the proviso of the preceding paragraph, the employer must carry out self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 135 (1) As regards a power-driven shearing machine, the employer must carry out self-inspections for the following matters periodically once every period not exceeding a year; provided, however, that this does not apply to the non-use period of a power-driven shearing machine which is not used for a

period exceeding one year:

- (i) abnormalities in a clutch and a brake;
 - (ii) abnormalities in a sliding mechanism;
 - (iii) abnormalities in an anti-repeat device, a quick-stop device, and an emergency stop device;
 - (iv) abnormalities in a magnet valve, a pressure-reducing valve and a pressure gauge; and
 - (v) abnormalities in wiring and switches.
- (2) As regards the shearing machine set forth in the proviso of the preceding paragraph, the employer must carry out self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 135-2 When having carried out the self-inspections set forth in the preceding two Articles, the employer must record the following matters and preserve the records for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts of a machine inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Specified Self-inspections)

Article 135-3 (1) The self-inspection prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to a power press (hereinafter referred to as the "specified self-inspection") is to be the self-inspection prescribed in Article 134-3.

(2) The worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to a power press is to be the person who falls under any of the following item:

- (i) a person who falls under any of the following sub-items and has completed the training course specified by the Minister of Health, Labour and Welfare:
 - (a) a person who has majored in and graduated from an engineering course of a university or a technical collage under the School Education Act, and has experience of having been engaged in the work of inspection or maintenance of a power press for two years or longer, or design or manufacture of a power press for five years or longer;
 - (b) a person who has majored in and graduated from an engineering course of

- a senior high school or a secondary education school under the School Education Act and has experience of having been engaged in the work of inspection or maintenance of a power press for four years or longer, or design or manufacture of a power press for seven years or longer;
- (c) a person who has experience of having been engaged in the work of inspection or maintenance of a power press for seven years or longer, or design or manufacture of a power press for 10 years or longer; or
- (d) a person who has completed the skills training course for operations chief of press machine listed in the Appended Table 18, item (2) of the Act and who has experience of having been engaged in the work using a power press for 10 years or longer; or
- (ii) other persons specified by the Minister of Health, Labour and Welfare.
- (3) As regards the application of the provisions of the preceding Article when having a registered inspection agency set forth in Article 45, paragraph (2) of the Act (hereinafter referred to as the "registered inspection agency") conduct the specified self-inspection pertaining to a power press, the term "the name of the person who has carried out the inspection" in item (v) of the same Article is deemed to be replaced with "the name of the registered inspection agency."
- (4) When having carried out the specified self-inspection pertaining to a power press, the employer must affix an inspection sticker stating the month and year when the specified self-inspection was carried out at a readily visible part of the power press.

(Inspection before Commencing the Work)

Article 136 When carrying out the work using press, etc., the employer must inspect the following matters before commencing the work for the day:

- (i) the function of a clutch and a brake;
- (ii) the slackness of a bolt of a crankshaft, a flywheel, a slide, a connecting rod and a connecting screw;
- (iii) the function of an anti-repeat device, quick-stop device and an emergency stop device;
- (iv) the function of mechanism for preventing dangers due to a slide or a blade;
- (v) the conditions of a die and a bolster for a press machine; and
- (vi) the conditions of a blade and a table for a shearing machine.

(Repair of Press Machines)

Article 137 When having found any abnormality in carrying out the self-inspection set forth in Article 134-3 or Article 135, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Section 5 Centrifugal Machine

(Fitting of a Lid)

Article 138 The employer must provide a lid on a centrifugal machine.

(Suspension of Operation in Taking Out the Contents)

Article 139 When taking out the contents of a centrifugal machine (excluding the centrifugal machine constructed so that the content is automatically taken out), suspend the operation of the centrifugal machine.

(Prohibition of Use at Speeds Exceeding Maximum Allowable Rotation)

Article 140 As regards a centrifugal machine, the employer must not use the centrifugal machine at a speed exceeding its maximum allowable rotating speed.

(Periodical Self-inspections)

Article 141 (1) As regards a power-driven centrifugal machine, the employer must carry out self-inspections for the following matters periodically once every period not exceeding a year; provided, however, that this does not apply to the non-use period of a centrifugal machine which is not used for a period exceeding one year:

- (i) abnormalities in rotor;
- (ii) abnormalities in bearing parts of the main shafts;
- (iii) abnormalities in brake;
- (iv) abnormalities in the outer frame; and
- (v) the slackness of a bolt used in the parts listed in each preceding item.

(2) As regards the centrifugal machine set forth in the proviso of the preceding paragraph, the employer must carry out self-inspection for the matters listed in each item of the same paragraph before resuming the use.

(3) When having carried out the self-inspections set forth in the preceding two paragraphs, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(4) When having found any abnormality in carrying out the self-inspection set forth in paragraph (1) or paragraph (2), the employer must immediately make

repairs or take other necessary measures.

Section 6 Crushing Machine and Mixer

(Prevention of Dangers of Falling)

Article 142 (1) When there is a risk of endangering workers due to falling from the opening of a crushing machine or a mixer, the employers must provide a lid, an enclosure, a railing with a height of 90 cm or higher, etc.; provided, however, that this does not apply when providing a lid, a cover or a railing, etc., is difficult due to the nature of the work, and having taken measures of having the worker use a safety belt (meaning the safety belt set forth in Article 13, paragraph (3), item (xxviii) of the Order; the same applies hereinafter) for preventing dangers of falling.

(2) When there is a risk of endangering workers due to coming into contact with moving parts from the opening set forth in the preceding paragraph, the employer must provide a lid, an enclosure, etc.

(3) A worker, when having been instructed to use a safety belt and other lifelines (hereinafter referred to as "safety belt, etc.") in the case set forth in the proviso of paragraph (1), must use the safety belt, etc.

(Suspension of Operation in Taking Out the Contents)

Article 143 (1) When taking out the contents of a crushing machine or a mixer (excluding the machine constructed so that the content is automatically taken out), the employer must suspend the operation of the machine; provided, however, that this does not apply when taking out the contents by suspending the operations of the machine is difficult due to the nature of the work, and having a worker use tools.

(2) A worker, when having been instructed to use a tool in the case set forth in the proviso of the preceding paragraph, must use the tool.

Section 7 Rolling Mills

(Enclosure of a Rolling Mill for Rolling Paper)

Article 144 The employer must provide an enclosure, a guide roll, etc., for the parts of the rolling mill in which paper, cloth, metal foil, etc., passes through, which have a risk of endangering workers.

(Shuttle Guard of a Weaving Machine)

Article 145 The employer must provide a shuttle guard for a weaving machine equipped with a shuttle.

(Covers on Drawing Blocks of a Wiredrawing Machine)

Article 146 The employer must provide a cover, an enclosure, etc., for a drawing block of a wiredrawing machine or a cage of strand-twisting machine, which has the risk of endangering workers.

(Prevention of Dangers Due to Injection Molding Machines)

Article 147 (1) When there is a risk of getting a part of a body of a worker caught in an injection molding machine, a molding machine or a stamping machine, etc., (excluding those machines prescribed by Section 4 of this Chapter), the employer must provide a door, starting device with two-hand control, and other safety devices.

(2) The door set forth in the preceding paragraph must be constructed so that the machine does not operate unless the door is closed.

(Prevention of Dangers Due to Fans)

Article 148 The employer must provide a net or an enclosure for blades of fans that have a risk of endangering workers.

Section 8 High Speed Rotating Body

(Prevention of Dangers During a Rotating Test)

Article 149 When carrying out a rotating test of a high speed rotating body (meaning the rotor of a turbine rotor, a basket of a centrifugal separator, etc., which has the circumferential speed exceeding 25 m/sec.; hereinafter the same applies in this Section), the employer must carry out the test inside a purpose-built sound building or at a place isolated by sound barriers, etc., in order to prevent dangers due to the destruction of the rotating body; provided, however, that this does not apply when a rotating test of the high speed rotating body other than those set forth in the following Article is carried out, and measures such as providing a sound cover in the testing facilities for preventing dangers due to destruction of the rotating body have been taken.

(Non-Destructive Inspection of the Rotating Shaft)

Article 150 When carrying out a rotating test of high speed rotating body (limited to the body that has rotating shaft with the weight exceeding 1 ton and the circumferential speed exceeding 120 m/sec.), the employer must confirm in advance, that there is no defect that has a risk of causing destruction to its rotating shaft by carrying out non-destructive inspection in accordance with the material, shape, etc.

(Implementation Method of a Rotating Test)

Article 150-2 When carrying out a rotating test of a high speed rotating body, the employer must carry out the test by a method of remote control, etc., which does not have a risk of endangering the worker conducting the work of controlling, measuring, etc., the rotating body due to destruction of the high speed rotating body.

Section 9 Industrial Robots

(Teaching)

Article 150-3 When carrying out the work of teaching, etc., industrial robots within their movement range, the employer must take the following measures in order to prevent the dangers due to an unexpected activation or an operational error of the industrial robots; provided, however, this does not apply to the measures set forth in the following items (i) and (ii), when work is carried out while the power source of the industrial robot is turned off.

- (i) to establish rules for the following matters and have workers carry out the work according to the rules:
 - (a) the method and the procedure for operating the industrial robot;
 - (b) the speed of the manipulator in operation;
 - (c) the method of signals when having more than one worker carry out the work;
 - (d) the measures in emergencies;
 - (e) the measures for resuming the operation of the industrial robot after suspending its operation in emergencies;
 - (f) other necessary measures for preventing dangers due to an unexpected activation or an erroneous operation of the industrial robot;
- (ii) to take measures in order to enable a worker engaging in the work or a person who oversees the worker to immediately suspend the operation of the industrial robot in emergencies; and
- (iii) to take measures of displaying a sign on the start switch, etc., of the industrial robot to indicate that the industrial robot is in operation while carrying out the operation in order to prevent persons other than the worker engaging in the operation from operating the start switch, etc.

(Prevention of Dangers During Operation)

Article 150-4 In operating an industrial robot (excluding when operating the industrial robot for teaching, etc., and when the work prescribed in the following Article must be carried out during the operation of the industrial robot), when there is a risk of endangering workers due to coming into contact with the industrial robot, the employer must take necessary measures of providing a railing, an enclosure, etc., for preventing the dangers.

(Inspections)

Article 150-5 In carrying out the work of inspecting, repairing, adjusting (excluding the work for teaching, etc.), cleaning or oiling, or confirming these results for an industrial robot within its movement range, the employer must take measures of suspending the operation of the industrial robot, as well as locking the start switch while carrying out the work and displaying a sign on the start switch of the industrial robot to indicate that the work is in progress in order to prevent persons other than the worker engaging in the operation from operating the start switch; provided; however, this does not apply when the work has to be carried out during operation of the industrial robot, and the following measures for preventing dangers due to an unexpected activation or an operational error of the industrial robot have been taken.

- (i) to establish rules for the following matters and have workers carry out work according to the rules:
 - (a) the method and procedure for the operation of the industrial robot;
 - (b) the method for signaling when having more than one worker carry out the work;
 - (c) the measures in emergencies;
 - (d) the measures for resuming the operation of the robot after suspending its operation in emergencies;
 - (e) other necessary measures for preventing dangers due to unexpected activation or erroneous operation of the industrial robot;
- (ii) to take measures for enabling workers engaging in the work or a person who oversees the workers to immediately suspend the operation of the industrial robot in emergencies; and
- (iii) to take measures for preventing a person other than the workers engaging in work from operating the selector switch, etc., for changing the operating conditions of the robot during work such as displaying a sign to indicate that the work is currently in progress on the selector switch, etc.

(Inspection)

Article 151 When carrying out the work of teaching, etc., (excluding the work carried out while the power source for the industrial robot is turned off) the industrial robot within its movement range, the employer must inspect the following matters before commencing the work for the day, and immediately make repairs or take other necessary measures when having found any abnormality:

- (i) damage to the insulation or sheath of an external cable;
- (ii) abnormalities in the function of the manipulator; and
- (iii) functions of the braking device and emergency stop device.

Chapter I-2 Material Handling Equipment
Section 1 Vehicle Type Material Handling Equipment
Subsection 1 General Provisions

(Definitions)

Article 151-2 The term "vehicle type material handling equipment, etc." as used in this Ministerial Order means those falling under any of the following items:

- (i) the forklift;
- (ii) the shovel-loader;
- (iii) the fork loader;
- (iv) the straddle carrier;
- (v) the transporting vehicle on rough terrain;
- (vi) the in-yard transporting vehicle (meaning the automobile constructed to exclusively transport cargos (limited to that with the length of 4.7 m or less, the width of 1.7 m or less and the height of 2.0 m or less) that has the maximum speed of 15 km/h or less (excluding the one falling under the preceding item)); or
- (vii) the truck (meaning the automobile constructed to exclusively transport cargos (excluding those falling under the preceding two items)).

(Work Plan)

Article 151-3 (1) When carrying out the work using a vehicle type material handling equipment, etc. (excluding the work of traveling on the road using a transporting vehicle on rough terrain or a truck; hereinafter the same applies up to Article 151-7), the employer must establish in advance a work plan that conforms to the space and landform of the place pertaining to the work, the type and capability of the equipment, and the type and shape of the cargo, and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the traveling route of the vehicle type material handling equipment, etc., and the method of the work according to the equipment, etc.

(3) When having established the work plan set forth in paragraph (1), the employer must make the matters indicated pursuant to the provisions of the preceding paragraph known to the workers concerned.

(Operation Supervisor)

Article 151-4 When carrying out the work using a vehicle type material handling equipment, etc., the employer must designate a supervisor for the work, and have the supervisor direct the work based on the work plan set forth in paragraph (1) of the preceding Article.

(Speed Limit)

Article 151-5 (1) When carrying out the work using a vehicle type material handling equipment, etc., (excluding the equipment that has a maximum speed of 10 km/h or less), set the appropriate speed limit for the vehicle type material handling machine, etc., in accordance with the landform and conditions of the ground, the place pertaining to the work, etc., in advance, and carry out the work by the set speed limit.

(2) The operator of the vehicle type material handling equipment, etc., set forth in the preceding paragraph must not operate the vehicle type material handling equipment, etc., at a speed exceeding the speed limit set forth in the same paragraph.

(Prevention of Falling)

Article 151-6 (1) When carrying out the work using a vehicle type material handling equipment, etc., the employer must take necessary measures for the traveling route of the equipment, etc., such as maintaining the necessary width and preventing uneven settling of the ground and collapse of shoulder in order to prevent workers from dangers due to overturning or falling of the equipment, etc.

(2) When the work using a vehicle type material handling equipment, etc., is carried out at a road shoulder, inclined place, etc., and when there is a risk of endangering workers due to overturning or falling of the equipment, etc., the employer must place a guide, and have the person guide the equipment, etc.

(3) The operator of the vehicle type material handling equipment, etc., referred to in the preceding paragraph must follow the instructions given by the guide set forth in the same paragraph.

(Prevention of Contact)

Article 151-7 (1) When carrying out the work using a vehicle type material handling equipment, etc., the employer must not allow a worker to enter a place that has a risk of endangering workers due to coming into contact with the vehicle type material handling equipment, etc., or its cargo during operation; provided, however, that this does not apply when placing a guide and having the person guide the equipment, etc.

(2) The operator of the vehicle type material handling equipment, etc., set forth in the preceding paragraph must follow the instruction given by the guide set forth in the proviso of the same paragraph.

(Signals)

Article 151-8 (1) When placing a guide for a vehicle type material handling

equipment, etc., the employer must set fixed signals and have the guide give the signals.

- (2) The operator of the vehicle type material handling equipment, etc., set forth in the preceding paragraph must follow the signals set forth in the same paragraph.

(Prohibition of Entry)

Article 151-9 (1) As regards a vehicle type material handling equipment, etc., (excluding those equipped with a device for preventing a fork, a shovel or an arm from unexpectedly descending due to its structure), the employer must not allow a worker to enter the place below its fork, shovel or sheathing cargo supported by them; provided, however that this does not apply when work for repairs or inspections, etc., are carried out, and having the worker engaged in the work use a safety prop or a safety block, etc., in order to prevent a worker from dangers due to unexpected descending of the fork, the shovel or the arm.

- (2) The worker carrying out the work set forth in the proviso of the preceding paragraph must use the safety prop, the safety block, etc., set forth in the proviso of the same paragraph.

(Loading of Cargo)

Article 151-10 When loading cargo on a vehicle type material handling equipment, etc., the employer must comply with the following requirements:

- (i) to load the cargo in a manner that prevents uneven loading.
- (ii) for a transporting vehicle on rough terrain, an in-yard transporting vehicle or a truck, to take such necessary measures of roping or sheeting cargos, etc., in order to prevent workers from dangers due to collapsing or falling of cargo.

(Measures to be Taken When Leaving the Operating Station)

Article 151-11 (1) When the operator of a vehicle type material handling equipment, etc., leaves the operating station, the employer must have the operator take the following measures:

- (i) to place a cargo handling device of the fork, shovel, etc., at the lowest descending position; and
 - (ii) to stop the prime mover and take measures of setting the brake securely to keep the machine in a stopped state, in order to prevent the vehicle type material handling equipment, etc., from breaking into a run.
- (2) The operator set forth in the preceding paragraph must take the measures listed in each item of the same paragraph when leaving the operating station of the vehicle type material handling equipment, etc.

(Transfer of a Vehicle Type Material Handling Equipment)

Article 151-12 When using a loading plate, fills, etc., in the case where a vehicle type material handling equipment, etc., is loaded to a truck, etc., or is unloaded from a truck, etc., by self-propelling or towing for transferring the equipment, the employer must comply with the following requirements in order to prevent dangers due to overturning, falling, etc. of the equipment:

- (i) to load or unload the equipment at a level and firm place;
- (ii) when using a loading plate, to use the loading plate with a sufficient length, width and strength, and fix it securely with appropriate incline; and
- (iii) when using fills or a temporary stand, etc., to secure a sufficient width, strength and appropriate incline.

(Restriction on Riding)

Article 151-13 When carrying out the work using a vehicle type material handling equipment, etc. (excluding a transporting vehicle on rough terrain and a truck), the employer must not allow a worker to ride on places other than the seat; provided, however, that this does not apply when having taken measures to prevent workers from dangers due to falling.

(Restriction on the Use for Other than Main Purpose)

Article 151-14 The employer must not use a vehicle type material handling equipment for purposes other than its main purpose, such as hoisting loads or raising or lowering workers; provided, however, that this does not apply if doing so is not likely to endanger workers.

(Repairs)

Article 151-15 When carrying out the work of repairing a vehicle type material handling equipment, etc., or fitting or removing its attachments, the employer must designate a person to supervise the work and have the person carry out the following matters:

- (i) to decide the work procedures, and directly supervise the work; and
- (ii) to monitor the use of safety props, safety blocks, etc., set forth in the proviso of Article 151-9, paragraph (1).

Subsection 2 Forklifts

(Front and Rear Lamps)

Article 151-16 As regards a forklift, the employer must not use a forklift without front and rear lamps; provided, however, that this does not apply to the place where necessary illumination for safely carrying out the work is maintained.

(Head Guard)

Article 151-17 As regards a forklift, the employer must not use a forklift without a head guard that conforms to the following requirements; provided, however, that this does not apply if doing so is not likely to endanger the operator of the forklift due to falling of cargo:

- (i) having the strength withstanding against the uniformly distributed static load equivalent to two times of the maximum load of the forklift (4 tons when the value exceeds 4 tons);
- (ii) having the opening of the upper frame with the width or the length of less than 16 cm;
- (iii) having the height from the upper surface of a driver's seat to the lower surface of the upper frame of a head guard of 95 cm or more for the type of forklift operated by a driver sitting on its driver's seat; and
- (iv) having the height from the floor surface of the driver's seat to the lower surface of the upper frame of the head guard of 1.8 m or more for the forklift operated by a driver standing.

(Backrest)

Article 151-18 As regards a forklift, the employer must not use a forklift without a backrest; provided, however, that this does not apply if doing so is not likely to endanger workers due to falling of cargo on the rear of the mast.

(Pallets)

Article 151-19 As regards a pallet or a skid used in the material handling work by a forklift, the employer must not use a pallet or a skid unless it meets the following requirements:

- (i) to have sufficient strength in accordance with the weight of cargos to be loaded; and
- (ii) to be free from marked damage, deformation or corrosion.

(Restriction of Use)

Article 151-20 As regards a forklift, the employer must not use a forklift in conditions exceeding the allowable load (meaning the maximum load that can be loaded in accordance with its structure and material of the forklift and the center of the gravity of the load to be loaded on the fork, etc. (meaning a device for loading cargo such as a fork, a ram)) and other capabilities.

(Periodical Self-inspection)

Article 151-21 (1) As regards a forklift, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of a forklift, which is not used for a period exceeding one year:

- (i) abnormalities in compression pressure, valve clearance and other parts of a prime mover;
 - (ii) abnormalities in differential, propeller shaft and other power transmission devices;
 - (iii) abnormalities in tire, wheel bearing and other traveling devices;
 - (iv) abnormalities in rotation angle of left and right steering wheels, knuckle, rod, arm and other controlling devices;
 - (v) abnormalities in braking capability, brake drum, brake shoe and other braking devices;
 - (vi) abnormalities in fork, mast, chains, chain wheel and other cargo handling devices;
 - (vii) abnormalities in hydraulic pump, hydraulic motor, cylinder, a safety valve and other parts of a hydraulic system;
 - (viii) abnormalities in voltage, amperage and other electrical system abnormalities; and
 - (ix) abnormalities in the body, head guard, backrest, warning device, direction indicator, lightning device, or meter.
- (2) As regards the forklift set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 151-22 (1) As regards a forklift, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of a forklift which is not used for a period exceeding one month:

- (i) abnormalities in braking device, clutch and controlling device;
 - (ii) abnormalities in cargo handling device and hydraulic system; and
 - (iii) abnormalities in head guard and backrest.
- (2) As regards the forklift set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 151-23 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and

(vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Specified Self-inspection)

- Article 151-24 (1) The specified self-inspection pertaining to a forklift is to be the self-inspection prescribed in Article 151-21.
- (2) The worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to a forklift is to be the person who falls under any of the following items:
- (i) a person who falls under any of the following sub-items and has completed the training course specified by the Minister of Health, Labour and Welfare:
 - (a) a person who has majored in and graduated from an engineering course of a university or a technical collage under the School Education Act, and has experience of having been engaged in the work of inspection or maintenance of a forklift for two years or longer, or design or manufacture of a forklift for five years or longer;
 - (b) a person who has majored in and graduated from an engineering course of a senior high school or a secondary education school under the School Education Act and has experience of having been engaged in the work of inspection or maintenance of a forklift for four years or longer, or design or manufacture of a forklift for seven years or longer;
 - (c) a person who has experience of having been engaged in the work of inspection or maintenance of a forklift for seven years or longer, or design or manufacture of a forklift for 10 years or longer;
 - (d) a person who has experience of having been engaged in the work of operating a forklift for 10 years or longer; or
 - (ii) other persons specified by the Minister of Health, Labour and Welfare.
- (3) As regards the forklift (limited to the forklift for which Article 48, paragraph (1) of the Road Transportation Vehicle Act (Act No. 185 of 1951) applies) used for the traveling prescribed in Article 2, paragraph (5) of the same Act (hereinafter referred to as "traveling"), when having conducted an inspection pursuant to the provisions of the same paragraph, the employer is not required to carry out the self-inspection set forth in Article 151-21 for the parts where the inspection has been carried out.
- (4) As regards the application of the provisions of the preceding Article when having a registered inspection agency implement the specified self-inspection pertaining to a forklift, the term "the name of the person who has carried out the inspection" in item (v) of the same Article is deemed to be replaced with "the name of the registered inspection agency."
- (5) When having carried out the specified self-inspection pertaining to a forklift,

the employer must affix an inspection sticker stating the month and year when the specified self-inspection was carried out at a readily visible part of the forklift.

(Inspection)

Article 151-25 When carrying out work using a forklift, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in the wheels; and
- (iv) functions of front and rear lamps, direction indicator and warning device.

(Repairs)

Article 151-26 When having found an abnormality in carrying out the self-inspection set forth in Article 151-21 or Article 151-22, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 3 Shovel-Loaders

(Front and Rear Lamps)

Article 151-27 As regards a shovel-loader or a fork loader (hereinafter referred to as "shovel-loader, etc."), the employer must not use a shovel-loader, etc., without front and rear lamps; provided, however, that this does not apply to the place where necessary illumination for safely carrying out the work is maintained.

(Head Guard)

Article 151-28 As regards a shovel-loader, etc., the employer must not use a shovel-loader, etc., without a solid head guard; provided, however, that this does not apply if doing so is not likely to endanger the operator of the shovel-loader, etc., due to falling of cargo.

(Loading of Cargo)

Article 151-29 As regards a shovel-loader, etc., the employer must load cargos in such a manner that the loaded cargo does not obstruct the operator's view.

(Restriction of Use)

Article 151-30 As regards a shovel-loader, etc., the employer must not use the shovel-loader for loading materials exceeding the maximum load or other purposes exceeding its capabilities.

(Periodical Self-inspection)

Article 151-31 (1) As regards shovel-loaders, etc., the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of shovel-loaders, etc. which is not used for a period exceeding one year:

- (i) abnormalities in the prime mover;
- (ii) abnormalities in power transmission device and traveling device;
- (iii) abnormalities in braking device and controlling device;
- (iv) abnormalities in the cargo handling device and hydraulic system; and
- (v) abnormalities in the electrical system, safety device and meters.

(2) As regards the shovel-loader, etc. set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 151-32 (1) As regards a shovel-loader, etc., the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of shovel-loaders, etc. which is not used for a period exceeding one month:

- (i) abnormalities in the braking device, clutch and controlling device;
- (ii) abnormalities in the cargo handling device and hydraulic system; and
- (iii) abnormalities in head guard.

(2) As regards the shovel-loader, etc., set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 151-33 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Inspection)

Article 151-34 When carrying out the work using a shovel-loader, etc., the

employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in the wheels; and
- (iv) functions of front and rear lamps, direction indicator and warning device.

(Repairs)

Article 151-35 When having found an abnormality in carrying out the self-inspection set forth in Article 151-31 or Article 151-32, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 4 Straddle Carriers

(Front and Rear Lamps)

Article 151-36 As regards a straddle carrier, the employer must not use a straddle carrier without front and rear lamps; provided, however, that this does not apply to the place where necessary illumination for safely carrying out the work is maintained.

(Restriction of Use)

Article 151-37 As regards a straddle carrier, the employer must not use the straddle carrier for loading cargo exceeding the maximum load and for other purposes exceeding its capabilities.

(Periodical Self-inspection)

Article 151-38 (1) As regards a straddle carrier, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of a straddle carrier which is not used for a period exceeding one year:

- (i) abnormalities in the prime mover;
- (ii) abnormalities in the power transmission device and traveling device;
- (iii) abnormalities in the braking device and controlling device;
- (iv) abnormalities in the cargo handling device and hydraulic system; and
- (v) abnormalities in the electrical system, safety device and meters.

(2) As regards the straddle carrier set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 151-39 (1) As regards a straddle carrier, the employer must carry out a

self-inspection for the following matters periodically once every period not exceeding month; provided, however, that this does not apply to the non-use period of a straddle carrier which is not used for a period exceeding one month:

- (i) abnormalities in the braking device, clutch and controlling device; and
- (ii) abnormalities in the cargo handling device and hydraulic system.

(2) As regards the straddle carrier set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 151-40 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Inspection)

Article 151-41 When carrying out the work using a straddle carrier, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in the wheels; and
- (iv) functions of front and rear lamps, direction indicator and warning device.

(Repairs)

Article 151-42 When having found an abnormality in carrying out the self-inspection set forth in Article 151-38 or Article 151-39, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 5 Transporting Vehicle on Rough Terrain

(Front and Rear Lamps)

Article 151-43 As regards a transporting vehicle on rough terrain (excluding those used for traveling), the employer must not use a transporting vehicle

without front and rear lamps; provided, however, that this does not apply to the place where necessary illumination for carrying out the work safely is maintained.

(Restrictions of Use)

Article 151-44 As regards a transporting vehicle on rough terrain, the employer must not use for loading cargos exceeding the maximum loading capability and for other purposes exceeding its capacities.

(Raising and Lowering Equipment)

Article 151-45 (1) When loading cargos on a transporting vehicle on rough terrain having the maximum loading capacity of 5 tons or more (including the work of roping and sheeting) and unloading cargos from a transporting vehicle on a rough terrain (including the work of unroping and unsheeting), the employer must provide the equipment for the worker engaging the work to go safely ascend and descend between the floor surface and the upper surface of the cargos on the loading platform in order to prevent workers from dangers due to falling.

(2) The worker engaging in the work set forth in the preceding paragraph, when ascending and descending between the floor surface and the upper surface of the cargos on the loading platform, must use the equipment for raising and lowering set forth in the preceding paragraph.

(Prohibition of the Use of an Inadequate Fiber Rope)

Article 151-46 The employer must not use a fiber rope falling under any of the following items for roping cargos on a transporting vehicle on rough terrain:

- (i) those with cut strand; or
- (ii) those with marked damage or corrosion.

(Inspection on a Fiber Rope)

Article 151-47 When using a fiber rope for roping cargos on a transporting vehicle on rough terrain, the employer must inspect the rope before starting the use for the day, and immediately replace it when having found an abnormality.

(Loading and Unloading)

Article 151-48 When loading a cargo with the weight of 100 kg or more on a transporting vehicle on rough terrain (including the work of roping and sheeting) or unloading the cargo from a transporting vehicle on a rough terrain (including the work of unroping and unsheeting), the employer must designate a person who supervises the work, and have the person carry out the following

matters:

- (i) to decide the work procedure and the work method for each work procedure, and directly supervise the work;
- (ii) to inspect the instruments and tools, and remove those defective;
- (iii) not to allow workers other than those concerned to enter the place where the work is carried out;
- (iv) when carrying out the work of unroping or unsheeting, to instruct the commencement of the work after having confirmed that there is no danger of cargos falling from the loading platform; and
- (v) to monitor the use of the equipment for raising and lowering set forth in Article 151-45, paragraph (1) and the safety helmet.

(Prohibition of Pulling Out Middle Cargo from the Pile)

Article 151-49 (1) When carrying out the work of unloading cargos from a transporting vehicle on rough terrain, the employer must not have the worker engaging in the work pull out middle cargo from the pile.

(2) The worker engaging in the work set forth in the preceding paragraph must not pull out middle cargo from the pile.

(Restrictions of Riding on the Loading Platform)

Article 151-50 (1) When traveling a transporting vehicle on rough terrain without a tailgate on the loading platform, the employer must not have a worker ride on the loading platform.

(2) In the case referred to in the preceding paragraph, the worker must not ride on the loading platform set forth in the same paragraph.

Article 151-51 (1) When traveling a transporting vehicle on a rough terrain with a tailgate on the loading platform and having a worker ride on the loading platform, the employer must comply with the following requirements:

- (i) to take measures to provide a stopper, a anti-slipper, etc., for the cargos which have the risk of endangering workers due to shifting in order to prevent workers from dangers due to the shifting of the cargos;
- (ii) to have the worker riding on the loading platform carry out the following matters:
 - (a) to close the tailgate securely;
 - (b) to not ride on the tailgate and other places where there is a risk of worker falling due to shaking of the transporting vehicle on a rough terrain; and
 - (c) to not ride with the highest part of the body of the worker exceeding the height of roof of the operator's seat (the highest part of the cargo when the highest part of the load on the loading platform is higher than the height of the roof of the operator's seat).

(2) The worker set forth in item (ii) of the preceding paragraph must carry out the matters listed in the same item.

(Wearing of Safety Helmet)

Article 151-52 (1) When carrying out the work of loading cargos on a transporting vehicle on a rough terrain having the maximum loading capacity of 5 tons or more (including the work of roping and sheeting) or unloading cargos from a transporting vehicle on a rough terrain having the maximum loading capacity of 5 tons or more (including the work of unroping and unsheeting), the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

(Periodical Self-inspection)

Article 151-53 (1) As regards a transporting vehicle on a rough terrain, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding two years; provided, however, that this does not apply to the non-use period of a transporting vehicle on a rough terrain which is not used for a period exceeding two years:

- (i) abnormalities in compression pressure, valve clearance and other abnormalities of the prime mover;
- (ii) abnormalities in the clutch, transmission, final driver and other abnormalities of power transmission devices;
- (iii) abnormalities in the drive wheel, idling wheel, vertical trunk roller, belt, tire, wheel bearing and other abnormalities of traveling devices;
- (iv) abnormalities in the rod, arm and other abnormalities of controlling devices;
- (v) abnormalities in braking capability, brake drum, brake shoe and other abnormalities of braking devices;
- (vi) abnormalities in loading platform, tailgate and other abnormalities of cargo handling devices;
- (vii) abnormalities in the hydraulic pump, hydraulic motor, cylinder, safety valve and other abnormalities of the hydraulic system;
- (viii) abnormalities in voltage, amperage and other abnormalities of the electrical system; and
- (ix) abnormalities in the body, warning device, direction indicator, lightning device and meter.

(2) As regards the transporting vehicle on a rough terrain set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the

operation.

Article 151-54 (1) As regards a transporting vehicle on a rough terrain, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of a transporting vehicle on a rough terrain which is not used for a period exceeding one month:

- (i) abnormalities in the braking device, clutch and controlling device; and
- (ii) abnormalities in the cargo handling device and hydraulic system;

(2) As regards the transporting vehicle on a rough terrain set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 151-55 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Specified Self-inspection)

Article 151-56 (1) The specified self-inspection pertaining to the transporting vehicle on a rough terrain is to be the self-inspection prescribed in Article 151-53.

(2) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to a transporting vehicle on a rough terrain. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i) is deemed to be replaced with "transporting vehicle on a rough terrain."

(3) As regards the transporting vehicle on a rough terrain used for traveling (limited to that on which Article 48, paragraph (1) of the Road Transportation Vehicle Act applies), when having made an inspection pursuant to the provisions of the same paragraph, the employer is not required to carry out the self-inspection set forth in Article 151-53 for the parts where the inspection

has been carried out.

- (4) As regards the application of the provisions of the preceding Article when having a registered inspection agency implement the specified self-inspection pertaining to a transporting vehicle on a rough terrain, the term "the name of the person who has carried out the inspection" in item (v) of the same Article is deemed to be replaced with "the name of the registered inspection agency."
- (5) When having carried out the specified self-inspection pertaining to a transporting vehicle on a rough terrain, the employer must affix an inspection sticker stating the month and year when the specified self-inspection was carried out at a readily visible part of the vehicle.

(Inspection)

Article 151-57 When carrying out the work using a transporting vehicle on a rough terrain, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in belt and wheel; and
- (iv) functions of front and rear lamps, direction indicator and warning device.

(Repairs)

Article 151-58 When having found any abnormalities in carrying out the self-inspection set forth in Article 151-53 or Article 151-54, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 6 In-yard Transporting Machine

(Braking Devices)

Article 151-59 As regards an in-yard transporting machine (excluding those used for traveling; hereinafter the same applies in this Article), the employer must not use it unless it conforms to the following requirements; provided, however, that the provisions of item (iv) does not apply to the in-yard transporting machine used at a place where necessary illumination for safely carrying out the work is maintained:

- (i) having an effective braking device for braking the travel motion and maintaining the stopped state;
- (ii) having an alarming horn;
- (iii) having a direction indicator on both the left and right side, for those with the distance between the center of the steering wheel and the outermost side of the body of 65 cm or more or those with an operator's seat in the cabin;

and
(iv) having front and rear lamps.

(Coupling Device)

Article 151-60 When coupling an in-yard transporting machine with a carriage, the employer must use a secure coupling device.

(Restriction of Use)

Article 151-61 As regards an in-yard transporting machine, the employer must not use it for loading cargos exceeding the maximum loading capacity and for other purposes exceeding its capabilities.

(Loading and Unloading)

Article 151-62 When loading a cargo with the weight of 100 kg or more on an in-yard transporting machine (including the work of roping and sheeting) or unloading the cargo from an in-yard transporting machine (including the work of unroping and unsheeting), the employer must designate a person who directs the work, and have the person carry out the following matters:

- (i) to decide the work procedure and the work method for each work procedure, and directly supervise the work;
- (ii) to inspect the instrument and tool, and remove those defective;
- (iii) not to allow workers other than those concerned to enter the place where the work is carried out; and
- (iv) when carrying out the work of unroping or unsheeting, to instruct the commencement of the work after having confirmed that there is no danger of cargos falling from the loading platform.

(Inspection)

Article 151-63 When carrying out the work using an in-yard transporting vehicle, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in the wheels; and
- (iv) functions of front and rear lamps, direction indicator and alarming horn.

(Repairs)

Article 151-64 When having found any abnormalities in carrying out the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 7 Truck

(Braking Devices)

Article 151-65 As regards a truck (excluding those used for traveling; hereinafter the same applies in this Article), the employe must not use it unless it conforms to the following requirements; provided, however, that the provisions of item (viii) does not apply to the truck that has the maximum speed of 20 km/h or less:

- (i) having an effective braking device for braking the travel motion and maintaining the stopped state;
- (ii) having an operator's seat that provides an operator with view for operating the vehicle safely and with a safety front glass that does not have a strain that obstructs the operator's vision;
- (iii) having pneumatic rubber tires without cracks, exposure of cord layers and other marked damages;
- (iv) having front and rear lamps;
- (v) having a direction indicator on both the left and right side at places where indicating portions are discernible from a distance of 30 m away from the rear or front of the truck along the center line of the truck's body, for those with distance between the center of the steering wheel and the outermost side of the body of 65 cm or more or those with an operator's seat in the cabin;
- (vi) having an alarming horn.
- (vii) being equipped with a rear mirror enabling the driver to operate the truck safely and a mirror enabling the driver to confirm obstacles directly in front of the truck; and
- (viii) being equipped with a speedometer.

(Restriction of Use)

Article 151-66 As regards a truck, the employer must not use it for loading cargos exceeding the maximum loading capacity and for other purposes exceeding its capabilities.

(Raising and Lowering Equipment)

Article 151-67 (1) When loading cargos on a truck having the maximum loading capacity of 5 tons or more (including the work of roping and sheeting) and unloading cargos from a truck having the maximum loading capacity of 5 tons or more (including the work of unroping and unsheeting), the employer must provide equipment for the worker engaging in the work to ascend and descend safely between the floor surface and the upper surface of the cargos on the loading platform in order to prevent workers from dangers due to falling.

(2) The worker engaging in the work set forth in the preceding paragraph, when ascending and descending between the floor surface and the upper surface of the cargos on the loading platform, must use the equipment for raising and lowering set forth in the preceding paragraph.

(Prohibition of the Use of Inadequate Fiber Rope)

Article 151-68 The employer must not use a fiber rope falling under any of the following items for roping cargos on a truck:

- (i) those with cut strands; and
- (ii) those with marked damage or corrosion.

(Inspection of Fiber Rope)

Article 151-69 When using a fiber rope for roping cargos on a truck, the employer must inspect the rope before starting the use for the day, and immediately replace it when having found an abnormality.

(Loading and Unloading)

Article 151-70 When loading a cargo with the weight of 100 kg or more on a truck (including the work of roping and sheeting) or unloading the cargo from a truck (including the work of unroping and unsheeting), the employer must designate a person who supervises the work, and have the person carry out the following matters:

- (i) to decide the work procedure and the work method for each work procedure, and directly supervise the work;
- (ii) to inspect the instrument and tool, and remove those defective;
- (iii) not to allow workers other than those concerned to enter the place where the work is carried out;
- (iv) when carrying out the work of unroping or unsheeting, to instruct the commencement of the work after having confirmed that there is no danger of cargos falling from the loading platform; and
- (v) to monitor the use of equipment for lifting and lowering set forth in Article 151-67, paragraph (1) and a safety helmet.

(Prohibition of Pulling Out Middle Cargo from the Pile)

Article 151-71 (1) When carrying out the work of unloading cargos from a truck, the employer must not allow the worker engaging in the work to pull out middle cargo from the pile.

(2) The worker engaging in the work set forth in the preceding paragraph must not pull out middle cargo from the pile.

(Restriction of Riding on a Loading Platform)

Article 151-72 (1) When traveling a truck without a tailgate on the loading platform, the employer must not allow a worker to ride on the loading platform.
(2) A worker, in the case referred to in the preceding paragraph, must not ride on the loading platform set forth in the same paragraph.

Article 151-73 (1) When traveling a truck with a tailgate on the loading platform, and having a worker ride on the loading platform, the employer must conform to the following requirements:

- (i) to take measures of providing a stopper, an anti-slipper etc., for the cargos which have a risk of endangering workers due to their shifting in order to prevent workers from dangers due to the shifting of the cargos;
 - (ii) to have the worker riding on the loading platform carry out the following matters:
 - (a) to close the tailgate securely.
 - (b) to not ride on the tailgate and other places where there is a risk of causing a worker to fall due to shaking of the tailgate or the truck; and
 - (c) to not ride with the highest part of the body of the worker exceeding the height of roof of the operator's seat (the highest part of the cargo when the highest part of the load on the loading platform is higher than the height of the roof of the operator's seat).
- (2) The worker set forth in item (ii) of the preceding paragraph must carry out the matters listed in the same item.

(Wearing of Safety Helmets)

Article 151-74 (1) When carrying out the work loading cargos on a truck having the maximum loading capacity of 5 tons or more (including the work of roping and sheeting) or unloading cargos from a truck having the maximum loading capacity of 5 tons or more (including the work of unroping and unsheeting), the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

(Inspection)

Article 151-75 When carrying out the work using a truck, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the braking device and controlling device;
- (ii) functions of the cargo handling device and hydraulic system;
- (iii) abnormalities in the wheels; and
- (iv) functions of front and rear lamps, the direction indicator and alarming horn.

(Repairs)

Article 151-76 When having found an abnormality in carrying out the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Section 2 Conveyor

(Prevention of Uncontrolled Flow)

Article 151-77 As regards a conveyor (excluding a flow-conveyor, a screw-conveyor liquid-conveyor and pneumatic slide; the same applies hereinafter), the employer must not use that without devices designed to prevent uncontrolled flow or back flow of loads or buckets due to power failure, voltage drop, etc., (referred to "uncontrolled flow breaker" in Article 151-82) equipped; provided, however, that this does not apply when the conveyor is used exclusively in a horizontal condition and when it is not likely to endanger the workers.

(Emergency Stop Device)

Article 151-78 As regards a conveyor, when there is a risk of endangering workers such as getting a part of a body of the worker caught, the employer must provide a device that enables to immediately stop the operation of a conveyor in an emergency (referred to "emergency stop device" in Article 151-82).

(Prevention of Falling of Cargos)

Article 151-79 When there is a risk of endangering workers due to falling of cargos from a conveyor, the employer must take measures such as providing a cover or an enclosure for the conveyor, etc., in order to prevent cargos from falling.

(Trolley Conveyor)

Article 151-80 As regards a trolley conveyor, the employer must not use it unless the trolley, chain and hanger are connected to each other securely so as not to become easily disconnected.

(Restriction of Riding)

Article 151-81 (1) The employer must not allow a worker to ride on a conveyor during operation; provided, however, this does not apply to the conveyor constructed for transporting workers and measures are taken to prevent workers from dangers due to falling or coming into contact, etc.

(2) A worker must not ride on a conveyor during operation excluding the case referred to in the proviso of the preceding paragraph.

(Inspection)

Article 151-82 When carrying out the work using a conveyor, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the prime mover and pulley;
- (ii) functions of the uncontrolled flow breaker;
- (iii) functions of the emergency stop device; and
- (iv) abnormalities in the cover, enclosure, etc. of the prime mover, rotating shaft, gear, pulley, etc.

(Repairs)

Article 151-83 When having found an abnormality in carrying out the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Chapter II Construction Machines

Section 1 Vehicle Type Construction Machines

Subsection 1 Structure

(Provision of Front Lamp)

Article 152 The employer must provide a vehicle type construction machine with a front lamp; provided, however, that this does not apply to a vehicle type construction machine used at a place where necessary illumination for safely carrying out the work is maintained.

(Head Guard)

Article 153 When using a vehicle type construction machine (limited to a bulldozer, a tractor shovel, a muck loader, a power shovel, a drag shovel and a breaker) in a place where there is a risk of endangering workers due to falling of rocks, etc., the employer must provide the vehicle type construction machine with a solid head guard.

Subsection 2 Prevention of Dangers Pertaining to the Use of Vehicle Type Construction Machines

(Investigation and Record)

Article 154 When carrying out the work using a vehicle type construction machine, the employer must investigate in advance the landform and condition of the nature of the soil, etc., of the place pertaining to the work in order to

prevent workers from dangers due to falling of the machine, collapse of natural ground, etc., and record the result of the investigation.

(Work Plan)

Article 155 (1) When carrying out the work using a vehicle type construction machine, the employer must establish in advance a work plan that conforms to what became known by the investigation pursuant to the provisions of preceding Article, and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the following matters:

- (i) the type and capability of the vehicle type construction machine to be used;
- (ii) the traveling route of the vehicle type construction machine; and
- (iii) the method of work by the vehicle type construction machine.

(3) When having established the work plan set forth in paragraph (1), the employer must make the matters set forth in items (ii) and (iii) of the preceding paragraph known to the workers concerned.

(Speed Limit)

Article 156 (1) When carrying out the work using a vehicle type construction machine (excluding those with the maximum speed of 10 km/h or less), the employer must, in advance, set the appropriate speed limit for the vehicle type construction machine in accordance with the landform and conditions of nature of the soil, etc., of the place pertaining to the work and carry out the work by the set speed limit.

(2) The operator of the vehicle type construction machine set forth in the preceding paragraph must not operate the vehicle type construction machine at a speed exceeding the speed limit set forth in the same paragraph.

(Prevention of Falling)

Article 157 (1) When carrying out the work using a vehicle type construction machine, the employer must take necessary measures for the traveling route of the machine etc., such as preventing collapse of the shoulder and uneven settling of the ground, and maintaining the necessary width in order to prevent workers from dangers due to overturning or falling of the machine.

(2) When the work using a vehicle type construction machine is carried out at road shoulder, inclined place, etc., and there is a risk of endangering workers due to overturning or falling of the machine, the employer must place a guide, and have the person guide the machine.

(3) The operator of a vehicle type construction machine set forth in the preceding paragraph must follow the instructions given by the guide set forth in the same paragraph.

(Prevention of Contact)

Article 158 (1) When carrying out the work using a vehicle type construction machine, the employer must not allow a worker to enter a place that has a risk of endangering workers due to coming into contact with the vehicle type construction machine during operation; provided, however, that this does not apply when the employer arranges a guide and has the person guide the machine.

(2) The operator of the vehicle type construction machine set forth in the preceding paragraph must follow the instruction given by guide set forth in the proviso of the same paragraph.

(Signals)

Article 159 (1) When placing a guide for operation of a vehicle type construction machine, the employer must set fixed signals and have the guide give the signals.

(2) The operator of the vehicle type construction machine set forth in the preceding paragraph must follow the signals set forth in the same paragraph.

(Measures to Be Taken in the Case of Leaving the Operating Station)

Article 160 (1) When the operator of a vehicle type construction machine leaves the operating station, the employer must have the operator take the following measures:

- (i) to place the working device such as a bucket, ripper, etc., on the ground; and
- (ii) to stop the prime mover and take measures such as setting the brake in order to prevent the vehicle type construction machine from breaking into a run.

(2) The operator set forth in the preceding paragraph must take measures listed in each item of the same paragraph when leaving the operating station of a vehicle type construction machine.

(Transfer of Vehicle Type Construction Machine)

Article 161 In the case of loading a vehicle type construction machine to a truck, etc., or unloading it from a truck, etc., by self-propelling or towing for transferring the machine, when using a loading plate, fills, etc., the employer must comply with the following requirements in order to prevent dangers due to overturning, falling, etc. of the machine:

- (i) to load or unload the machine at a level and firm place;
- (ii) when using a loading plate, to use the plate with sufficient length, width and strength, and fix it securely with appropriate incline; and
- (iii) when using fills or a temporary stand, etc., to secure sufficient width,

strength, and appropriate incline.

(Restriction of Riding)

Article 162 When carrying out the work using a vehicle type construction machine, the employer must not allow a worker to ride on places other than the seat.

(Restriction of Use)

Article 163 When carrying out the work using a vehicle type construction machine, the employer must observe the stability, the maximum working load, etc., decided on the basis of its structure in order to prevent workers from dangers due to overturning or destruction of working device of an sheathing a boom, etc.

(Restriction on the Use for Purpose Other than the Main Purpose)

Article 164 (1) The employer must not use a vehicle type construction machine for purpose other than its main purpose such as to hoist loads by using a power shovel or to raise or lower workers in a clamshell.

(2) The provisions of the preceding paragraph do not apply to a case that falls under any of the following items:

(i) the case falling under all of following sub-items, when the load lifting work is carried out:

(a) when it is unavoidable due to the nature of the work or necessary for the safe implementation of the work;

(b) when metal parts of a hook and a shackle or any other hoisting parts falling under all of following conditions are fitted to the work device such as an arm or a bucket:

1. having sufficient strength in accordance with the load to be applied;

2. having no risk of the danger of the load lifted falling from the parts due to the use of a latch;

3. the load has no risk of coming off from the work device;

(ii) when work other than lifting a load is carried out, and there is no risk of endangering the workers.

(3) When carrying out the load lifting work falling under item (i), (a) and (b) of the preceding paragraph, the employer must take the following measures to prevent workers from dangers due to coming into contact with the lifted load, falling of the lifted load, and overturning or falling of the vehicle type construction machine:

(i) to set fixed signals for load lifting work, as well as designate a person who gives the signals and have the person give the signals;

(ii) to carry out the work on a level place;

- (iii) to not allow workers to enter the place where there is a risk of endangering workers due to contact with load or falling of the load;
- (iv) to not apply the load that exceeds the maximum load established in accordance with the structure and material of the vehicle type construction machine;
- (v) to use a wire rope falling under all of following cases in the case where the wire rope is used as the slinging equipment:
 - (a) those with a safety coefficient (meaning a safety coefficient prescribed in Article 213, paragraph (2) of the Crane Ordinance) of 6 or more;
 - (b) those with less than 10% of the element wires (excluding filler wires) are cut in one strand;
 - (c) those with the reduction ratio of a diameter 7 % or less of the normal diameter;
 - (d) those without kinks;
 - (e) those without marked deformation or corrosion;
- (vi) to use a suspension chain falling under all of following conditions when the suspension chain is used as a suspension device:
 - (a) those with a safety coefficient (meaning a safety coefficient prescribed in Article 213-2, paragraph (2) of the Crane Ordinance) equal to or above the value listed in 1 or 2 below in accordance with the classification of chains listed in 1 or 2 below:
 - 1. chain falling under all of following conditions: 4
 - i. those with an extension of 0.5 % or less when loaded with one half of the breaking load;
 - ii. those with tensile strength of 400 N/mm² or more and with the extension listed in the right column of the following table or more in accordance with the tensile strength listed in the left column.

Tensile Strength (Unit: N/mm ²)	Extension (Unit: Percent)
400 or more and less than 630	20
630 or more and less than 1000	17
More than 1000	15

- 2. those not falling under 1: 5
 - (b) those with the extension of 5 % or less of the length of the chain when it was manufactured;
 - (c) those with a reduction in section diameter of the links of 10 % or less of the section diameter of the links at the time of manufacture of the chain;
 - (d) those without cracks;
- (vii) when using something other than a wire rope or a lifting chain as the slinging equipment, to use the thing without marked damage or corrosion.

(Repairs)

Article 165 When carrying out the work of repairing a vehicle type construction machine, or fitting or removing its attachments, the employer must designate a person to direct the work and have the person take the following measures:

- (i) to decide the work procedures, and supervise the work;
- (ii) to monitor the state of use of a safety prop, a safety block, etc., prescribed in paragraph (1) of the following Article.

(Prevention of Dangers Due to Lowering of Booms)

Article 166 (1) When carrying out the work of repairing, checking, etc., below the raised boom or arm, etc., of a vehicle type construction machine, the employer must have the worker engaging in the work use a safety prop, a safety block, etc., in order to prevent workers from dangers due to unexpected descending of the boom or the arm, etc.

(2) The worker engaging in the work set forth in the preceding paragraph must use the safety prop, safety block, etc., set forth in the same paragraph.

Subsection 3 Periodical Self-inspection

(Periodical Self-inspection)

Article 167 (1) As regards a vehicle type construction machine, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided; however, that this does not apply to the non-use period of a vehicle type construction machine which is not used for a period exceeding one year:

- (i) abnormalities in compression pressure, valve clearance and other abnormalities of the prime mover;
- (ii) abnormalities in the clutch, transmission, propeller shaft, differential, and other abnormalities of power transmission devices;
- (iii) abnormalities in the drive wheel, idling wheel, vertical trunk roller, belt, tire, wheel bearing, and other abnormalities of traveling devices;
- (iv) abnormalities in rotation angle of left and right steering wheels, knuckle, rod, arm and other abnormalities of controlling devices;
- (v) abnormalities in braking capability, brake drum, brake shoe and other abnormalities of brakes;
- (vi) abnormalities in blade, boom, link-mechanism, bucket, wire rope and other abnormalities of working devices;
- (vii) abnormalities in hydraulic pump, hydraulic motor, cylinder, safety valve and other abnormalities of the hydraulic system;
- (viii) abnormalities in voltage, amperage and other abnormalities of the

- electrical system; and
 - (ix) abnormalities in the body, operating device, head guard, back stopper, raising and lowering device, locking device, warning device, direction indicator, lightning device and meter.
- (2) As regards the vehicle type construction machine set forth in the proviso of the preceding paragraph, the employer must carry out self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 168 (1) As regards a vehicle type construction machine, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of a vehicle type construction machine which is not used for a period exceeding one month:

- (i) abnormalities in brake, clutch, controlling devices and working devices;
 - (ii) damage in wire rope and chain; and
 - (iii) damage in bucket, zipper, etc.
- (2) As regards the vehicle type construction machine set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 169 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Specified Self-inspection)

- Article 169-2 (1) The specified self-inspection pertaining to the vehicle type construction machine is to be the self-inspection prescribed in Article 167.
- (2) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to machines listed in the Appended Table 7, item (1), item (2), or

item (6) of the Order among vehicle type construction machines. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i), (a) through (c) is deemed to be replaced with "machines listed in the Appended Table 7, item (1), item (2), or item (6) of the Order among vehicle type construction machines" and the term "forklifts" in (d) of the same item is deemed to be replaced with "machines listed in the Appended Table 7, item (1), item (2), or item (6) of the Order among vehicle type construction machines."

- (3) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to machines listed in the Appended Table 7, item (3) of the Order among vehicle type construction machines. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i) is deemed to be replaced with "machines listed in the Appended Table 7, item (3) of the Order among vehicle type construction machines."
- (4) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to machines listed in the Appended Table 7, item (4) of the Order among vehicle type construction machines. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i) is deemed to be replaced with "machines listed in the Appended Table 7, item (4) of the Order among vehicle type construction machines."
- (5) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to machines listed in the Appended Table 7, item (5) of the Order among vehicle type construction machines. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i) is deemed to be replaced with "machines listed in the Appended Table 7, item (5) of the Order among vehicle type construction machines."
- (6) As regards the vehicle type construction machine used for traveling (limited to the machine to which Article 48, paragraph (1) of the Road Transportation Vehicle Act applies), when an inspection pursuant to the provisions of the same paragraph has been carried out, the employer is not required to carry out the self-inspection set forth in Article 167 for the parts where the inspection has been carried out.
- (7) As regards the application of the provisions of the preceding Article when having a registered inspection agency conduct the specified self-inspection pertaining to a vehicle type construction machine, the term "the name of the person who has carried out the inspection" in item (v) of the same Article is

deemed to be replaced with "the name of the registered inspection agency."

(8) When having carried out the specified self-inspection pertaining to a vehicle type construction machine, the employer must affix an inspection sticker stating the month and year when the specified self-inspection was carried out at a readily visible part of the machine.

(Inspection before Commencing Work)

Article 170 When carrying out the work using vehicle type construction machine, the employer must inspect functions of the brake and clutch before commencing the work for the day.

(Repairs)

Article 171 When having found any abnormalities in carrying out the self-inspection set forth in Article 167 or Article 168, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Subsection 4 Concrete Pump Vehicle

(Prevention of Coming off or Sway of Transport Pipes)

Article 171-2 When carrying out the work using a concrete pump vehicle, the employer must take the following measures:

- (i) to take measures of preventing the coming off or sway of the transport pipe or hose such as securely attaching a transport pipe to a transport pipe or a hose using couplings, and securing the transport pipe onto a solid building, etc.;
- (ii) to provide devices of a telephone, an electric bell, etc., designate persons who use each device and have the persons use them, or set fixed signals, designate a person who gives the signals and have the person give the signals, in order to ensure the communication between the person operating the work device and the person holding the terminal of the hoses;
- (iii) to not allow workers to enter the place where there is a risk of endangering workers due to blow out of concrete, etc.;
- (iv) when the transport pipe or hose is blocked, and seeking to cut off the coupling of the transport pipe or hose (hereinafter referred to as "transport pipe, etc." in this Article and the following Article), take in advance, measures for preventing blow out, etc., of concrete, such as lowering the internal pressure of the transport pipe, etc., by opening the valve or cock of the air compressor valve;
- (v) when cleaning the inside of the transport pipe, etc., using a cleaning ball, to attach an instrument to the end of the transport pipe, etc., in order to

prevent workers from dangers due to the cleaning ball flying out.

(Supervision of Work)

Article 171-3 When assembling or dismantling a transport pipe, etc., the employer must establish the method and procedures, etc., of the work, make them known to the workers, designate a person who supervises the work and have the workers carry out the work under the person's direct supervision.

Subsection 5 Breaker

(Work of Demolishing a Structure)

Article 171-4 When carrying out the work of dismantling or demolishing a structure using a breaker (excluding the work set forth in Article 6, item (xv)-5 of the Order) or the work of breaking concrete or stone, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers regarding the implementation of the work are expected due to bad weather conditions such as strong wind, heavy rain or heavy snow.

Section 2 Pile Driver, Pile Drawer, and Boring Machine

(Strength)

Article 172 As regards bodies, accessory devices and fittings of a pile driver and a pile drawer driven by power (excluding those capable of self-propelling to unspecified places) and a boring machine, the employer must not use them unless they fall under the following requirements:

- (i) having necessary strength that conforms to the purpose of use; and
- (ii) being free from marked damage, wear, deformation or corrosion.

(Prevention of Collapse)

Article 173 As regards a pile driver driven by power (hereinafter referred to as "pile driver") or a pile drawer driven by power (hereinafter referred to as "pile drawer") or a boring machine, the employer must take the following measures for preventing its collapse:

- (i) when installing the machine on soft ground, to use boards, blocks, etc., for preventing settling of legs or the cradle;
- (ii) when installing the machine in facilities or on a temporary construction, to confirm the durability, and when the durability is insufficient, to reinforce the durability;

- (iii) when there is a risk of the leg part or the cradle to slide, to secure the leg part or the cradle by using piles, wedges, etc.;
- (iv) for a pile driver, a pile drawer or a boring machine designed to be moved on rollers or on rail tracks, to secure the machine with rail clamps, a stopper, etc., in order to prevent it from moving unexpectedly;
- (v) when the top part is to be stabilized only with stays (including bracing wires; hereinafter the same applies in this Section), to use three or more stays and secure each end of the stays to a sound tie bar, iron frame, etc.;
- (vi) when the top part is to be stabilized only with bracing wires, to stabilize the top part in all directions by methods such as arranging the bracing wires at equal intervals and increasing the number of staying wires; and
- (vii) when stabilizing the machine by using balance weights, to fix them securely on the cradle in order to prevent the balance weights from shifting.

(Prohibition of the Use of an Inadequate Wire Rope)

Article 174 As regards a hoisting wire rope for a pile driver, a pile drawer or a boring machine, the employer must not use the ropes falling under any of the following items:

- (i) those with joints;
- (ii) those with 10% or more of the element wires (excluding filler wires) are cut in one strand;
- (iii) those with the reduction ratio of a diameter that exceeds 7% of the nominal diameter;
- (iv) those with kinks; and
- (v) those with marked deformation or corrosion.

(Safety Coefficient of Hoisting Wire Ropes)

Article 175 (1) As regards hoisting wire ropes for a pile driver or a pile drawer, the employer must set the safety coefficient at six or higher.

(2) The safety coefficient set forth in the preceding paragraph is to be the value obtained by dividing the breaking load of the wire rope by the maximum value of the load applied on to the wire rope.

(Hoisting Wire Rope)

Article 176 As regards hoisting wire ropes to be used on a pile driver, a pile drawer or a boring machine, the employer must take the following measures:

- (i) hoisting wire ropes are to have a length sufficient to leave at least two windings on their drum of the hoisting equipment at the time when the dropping weight or hammer is placed at the lowest position, at the position for starting the drawing of a sheet pile or the suspension tool, including the rod, is at its lowest position;

- (ii) hoisting wire ropes to be fixed securely to the drum of the hoisting device with clamps, clips, etc.; and
- (iii) in connecting a dropping weight or a hammer to the hoisting wire rope of the pile driver or connecting the hoisting wire rope of the boring machine to a pulley block, a hoisting swivel, etc., clamps, clips, etc. are to be used to securely connect them.

(Connection with Sheet Piles and Rods)

Article 177 As regards hoisting wire ropes, pulley blocks, etc., of a pile driver or a boring machine, the employer must securely connect them with poles, sheet piles, rods, etc., by using such tools as shackles, checking fixtures, hoisting swivels, etc., that have sufficient strength.

(Provision of Brakes)

Article 178 As regards the winch used for a pile driver, a pile drawer or a boring machine, the employer must provide the machine with a ratchet or a brake equipped with a clamp; provided, however, that this does not apply to the winch used for a boring machine with a braking device such as a band brake.

(Installation of a Winch)

Article 179 As regards a winch of a pile driver, a pile drawer or a boring machine, the employer must install it in a manner that floating, shifting, sway, etc., may be prevented.

(Position of Sheaves)

Article 180 (1) As regards the distance between the shaft of a drum barrel of a pile driver, pile drawer or boring machine and the shaft of the first sheave from the hoisting equipment, the employer must set the distance to a value equivalent to 15 times or more of the width of the drum of the hoisting equipment.

(2) The sheave referred to in the preceding paragraph must go through the center of the drum of the hoisting equipment and be placed on a plane perpendicular to the shaft.

(3) The provisions of the preceding two paragraphs do not apply to the cases falling under any of the following items:

- (i) when there is no risk of irregular winding of the hoisting wire rope due to the structure of the pile driver, a pile drawer or a boring machine; or
- (ii) when workers are prohibited from entering the area where there is a risk of causing danger due to the hoisting wire rope being cut in carrying out the work using a boring machine in a very confined space such as a tunnel.

(Fitting of Sheaves)

Article 181 As regards sheaves or pulley blocks of a pile driver, a pile drawer or a boring machine, the employer must fasten the devices securely using fittings, shackles, wire ropes, etc., which do not have the risk of breaking by the load applied to the fixed part.

Article 182 As regards sheaves of a pile driver, a pile drawer or a boring machine in which the winch is not integrated with the tower or the twin pillar, etc., the employer must place the winch so that the horizontal component of force acting on the hoisting wire rope does not affect the tower or the twin-pole; provided, however, when measures such as providing a prop to the leg of the tower or the twin pillar to support the leg by wire ropes are taken, sheaves may be fixed on the leg.

(Steam Hoses)

Article 183 When using a pile driver or a pile drawer driven with steam or compressed air, the employer must take the following measures:

- (i) to firmly connect a steam hose or an air hose with a hammer at a place other than the joint parts of the hose and the hammer for preventing damages or disconnection of these joints parts due to the motion of the hammer.
- (ii) to install a device for cutting off steam or air at a place where a hammer operator is able to easily handle the device.

(Measures to Be Taken When Irregular Winding Occurs)

Article 184 When a wire rope is wound irregularly on the drum of the hoisting equipment of a pile driver, a pile drawer or a boring machine, the employer must not have workers apply a load on the hoisting wire rope.

(Measures to Be Taken When the Hoisting Device is Suspended)

Article 185 When leaving a hoisting device of a pile driver, a pile drawer or a boring machine suspended with the load applied to the hoisting equipment, the employer must securely suspend the machine by applying ratchets and using a brake with clamp.

(Prohibition of Leaving the Operating Station)

Article 186 (1) The employer must not allow the operator of a pile driver, a pile drawer or a boring machine to leave the operating station of the machine while loads are applied to the hoisting equipment.

(2) The operator set forth in the preceding paragraph must not leave the operating station of a pile driver or a pile drawer while loads are applied to the hoisting equipment.

(Prohibition of Entry)

Article 187 The employer must not allow a worker to enter the inside of the bent part of a hoisting wire rope of a pile driver, a pile drawer or a boring machine during operation in order to prevent dangers of the spring motion of the wire rope or sheaves or pulley blocks, etc., that come flying due to the damage of sheaves, pulley blocks or their fixing parts of the machines.

(Measures to Be Taken When Hoisting Sheet Piles and Rods)

Article 188 When hoisting piles, sheet piles and rods, etc., with a pile driver or a boring machine, the employer must have the operator of the machine hoist piles in a manner that the hook part is located right under the sheave or the pulley block of the machine. The same applies to the case of hoisting a pile or sheet pile by providing a pile driver with a hoisting device such as a gin pole.

(Signals)

Article 189 (1) The employer must set fixed signals for the operation of a pile driver, a pile drawer or a boring machine, designate a person who gives the signals and have the person give the signals when operating the machine.
(2) An operator of a pile driver, a pile drawer or a boring machine must follow the signals set forth in the preceding paragraph.

(Supervision of the Work)

Article 190 When carrying out the work of assembling, disassembling, altering or transfer of a pile driver, a pile drawer or a boring machine, the employer must determine the method, procedures, etc., of the work, and make them known to the workers, designate a person who supervises the operation, and have the workers carry out the work under the direct supervision of the person.

(Transfer of Pile Drivers)

Article 191 When transferring the legs of a pile driver or a pile drawer supported with stayed wires, etc., with the twin pillar, mast, etc., in a standing position, using power-driven winch or other machines, the employer must carry out the operation while braking the movement of the machine securely with a winch, tension blocks, etc., from the opposite side in order to prevent collapse due to the legs being dragged excessively.

(Inspection)

Article 192 When having assembled a pile driver, pile drawer or boring machine, the employer must inspect the following matters, and not allow the use of the machines unless having confirmed that there are no abnormalities:

- (i) damage and slackness of joint parts of the machine;
- (ii) fitted state of the hoisting wire rope, sheave, and pulley block;
- (iii) functions of the brake and ratchets of hoisting device;
- (iv) installation status of a winch; and
- (v) for a pile driver or a pile drawer of which the top part is secured with stays, the method of fixing the stays and the firmness of the stays.

(Measures to Be Taken in the Case of Slackening the Bracing Wires)

Article 193 When slackening the bracing wires (including temporary bracing wires, hereinafter the same applies in this Article) of a pile driver or a pile drawer, the employer must take appropriate measures such as using tension blocks or winches in order to prevent letting the load exceed the limit of the load the workers engaged in the slackening operation are able to easily support.

(Prevention of Damage to Gas Pipes)

Article 194 When the work using a pile driver or boring machine is carried out and there is a risk of endangering workers due to damage of gas pipes, underground electric lines and other underground structures (hereinafter referred to as "gas pipes, etc." in this Article), the employer must in advance, conduct investigation of the workplace by inquiring the existence of the gas pipes, etc., and confirming their conditions to the person administrating the gas pipes, etc., and take measures in conformity with the matters they have come to know by the investigation.

(Measures to Be Taken when Attaching Rods)

Article 194-2 (1) When attaching or removing the rod or bit, etc., of a boring machine, the employer must securely cut off the power rotating the rod, etc., by fixing the clutch lever with a stopper.
(2) When removing a rod or attaching or removing a bit, etc., from a boring machine, the employer must securely store the rod in the rod holder, etc.

(Fixing the Hose for a Water Swivel)

Article 194-3 As regards a hose to be connected to the water swivel of a boring machine, the employer must take measures such as fixing the hose to a tower in order to prevent workers from danger due to the hose being trapped into the rotating parts of the rod, etc.

Section 2-2 Jack-type Lifting Machines

(Holding Mechanisms)

Article 194-4 The employer must not use a jack-type lifting machine for

construction work unless the machine falls under the following requirements:

- (i) having the necessary strength in accordance with the purpose of use;
- (ii) for holding mechanisms, having the necessary capability to hold a wire rope, etc.;
- (iii) having the mechanism to prevent simultaneous opening of all the holding mechanisms; and
- (iv) being free from marked damage, wear, deformation or corrosion.

(Work Plan)

Article 194-5 (1) When carrying out the work of lifting or lowering the load using a jack-type lifting machine in carrying out construction, the employer must establish in advance a work plan and carry out the work according to the work plan.

- (2) The work plan set forth in the preceding paragraph must indicate the following matters:
 - (i) the method and procedures of the work;
 - (ii) the method for preventing the jack-type lifting machine to be used from collapsing or overturning;
 - (iii) the method of installing the equipment for preventing the worker engaged in the work from danger of falling; and
 - (iv) the type and capability of the machine, etc., to be used.
- (3) When having established the work plan set forth in paragraph (1), the employer must make the matters set forth in each item of the preceding paragraph known to the workers concerned.

(Work Using a Jack-type Lifting Machine)

Article 194-6 When carrying out the work of lifting, lowering, etc., of load using a jack-type lifting machine in carrying out construction work, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers involved in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain or heavy snow;
- (iii) when installing a jack-type lifting machine in facilities and temporary buildings etc., to fasten the machine securely using bolts, etc.; and
- (iv) when installing a jack-type lifting machine in facilities and temporary buildings, etc., to confirm the strength of the facilities and temporary buildings, etc., and to reinforce the strength when it is insufficient.

(Wearing of Safety Helmets)

Article 194-7 (1) When the work of lifting and lowering of load is carried out using a jack-type lifting machine in carrying out construction work, the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

(2) The worker engaged in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Section 2-3 Vehicle for Work at Height

(Front and Rear Lamps)

Article 194-8 As regards a vehicle for work at height (excluding those used for traveling; hereinafter the same applies in this Article) the employer must provide front and rear lamps for the vehicle; provided, however, that this does not apply to a vehicle for work at height used in the place where necessary illumination for safely carrying out the work is maintained.

(Work Plan)

Article 194-9 (1) When carrying out the work using a vehicle for work at height (excluding the work of traveling on roads; hereinafter the same applies up to Article 194-11), the employer must establish in advance a work plan in conformity with the situation of the place pertaining to the work, the type and capability of the vehicle, and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the work method using the vehicle for work at height.

(3) When having established the work plan set forth in paragraph (1), the employer must make the matters indicated pursuant to the provisions of the preceding paragraph known to the workers concerned.

(Operation Supervisor)

Article 194-10 When carrying out the work using a vehicle for work at height, the employer must designate a supervisor for the work, and have the supervisor direct the work based on the work plan set forth in paragraph (1) of the preceding Article.

(Prevention of Falling)

Article 194-11 When carrying out the work using a vehicle for work at height, the employer must take necessary measures of projecting an outrigger, preventing uneven settling of the ground, and collapsing of a road shoulder in order to prevent workers from dangers due to overturning or falling of the vehicle.

(Signals)

Article 194-12 When carrying out the work using a vehicle for work at height and operating a working floor at a place other than the working floor, the employer must take necessary measures of setting fixed signals, designating a person who gives the signals and having the person give the signals, etc., in order to ensure the communication between the worker on the working floor and the worker operating the working floor at a place other than the working floor.

(Measures to Be Taken in the Case of Leaving the Operating Station)

Article 194-13 (1) When the operator of a vehicle for work at height leaves the operating station (excluding the case where a worker carries out the work on the working floor or attempting to carry out the work), the employer must have the operator take the following measures:

- (i) to put the working floor in the lowest position; and
 - (ii) to stop the prime mover and take measures of setting the brake securely to keep the machine in stopped state in order to prevent the vehicle for work at height from breaking into a run.
- (2) The operator set forth in the preceding paragraph must take the measures listed in each item of the same paragraph when leaving the operating station for traveling of the vehicle for work at height.
- (3) When the operator of a vehicle for work at height leaves the operating station for traveling, for carrying out the work on the working floor, or attempting to carry out the work, the employer must have the operator take measures such as setting the brake securely to keep the machine in a stopped state.
- (4) The operator set forth in the preceding paragraph must take measures listed in each item of the same paragraph when leaving the operating station for traveling of the vehicle for work at height.

(Transfer of Vehicle for Work at Height)

Article 194-14 When using a loading plate, fills, etc., in the case where a vehicle for work at height is loaded to a truck, etc., or unloaded from a truck, etc., by self-propelling or towing for transferring the machine, the employer must comply with the following requirements in order to prevent dangers due to overturning, falling, etc., of the vehicle:

- (i) to load or unload the vehicle at a level and firm place;
- (ii) when using a loading plate, to use the plate with sufficient length, width and strength, and fix it securely with appropriate incline; and
- (iii) when using fills or a temporary stand, etc., to secure sufficient width, strength and appropriate incline.

(Restriction of Riding)

Article 194-15 When the work using a vehicle for work at height is carried out, the employer must not allow a worker to ride on places other than the seat or the working floor.

(Restriction of Use)

Article 194-16 As regards a vehicle for work at height, the employer must not use it for the load exceeding the loading capacity (meaning the maximum load the vehicle is capable of raising with personnel or loads on working floor, in accordance with its structure and materials of the vehicle for work at height) and for other purposes exceeding its capabilities.

(Restriction on the Use for Purposes Other than the Main Purpose)

Article 194-17 The employer must not use a vehicle for work at height for purposes other than its main purpose of hoisting loads; provided, however, that this does not apply there is no risk of endangering workers in doing so.

(Repairs)

Article 194-18 When carrying out the work of repairing a vehicle for work at height, or fitting or removing the working floor, the employer must designate a person to supervise the work and have the person carry out the following matters:

- (i) to decide the work procedures, and directly supervise the work; and
- (ii) to monitor the use of the safety prop, safety block, etc., prescribed in paragraph (1) of the following Article.

(Prevention of Danger Due to Falling Booms)

Article 194-19 (1) When carrying out the work of repairs, inspection, etc., below the raised boom of a vehicle for work at height, the employer must have the worker engaging in the work use a safety prop and a safety block, etc., in order to prevent workers from dangers due to the unexpected falling of the boom, etc.
(2) The worker engaging in the work set forth in the preceding paragraph must use the safety prop and safety block, etc., set forth in the same paragraph.

(Restriction of Riding on the Working Floor)

Article 194-20 (1) When having a vehicle for work at height (excluding those with a structure of carrying out the traveling operation on the working floor; hereinafter the same applies in this Article) travel, the employer must not allow a worker to ride on the working floor of the vehicle for work at height; provided, however, that this does not apply when having the vehicle for work at height travel at a level and firm place, and the following measures have

been taken:

- (i) to arrange a guide, and have the person guide the vehicle for work at height;
 - (ii) to set fixed signals and have the guide set forth in the preceding item give the signals;
 - (iii) to set an appropriate working speed limit for the vehicle for work at height in accordance with the height of the working floor and the length of the boom, etc. of the vehicle for work at height in advance, and have the operator operate the vehicle within the speed limit.
- (2) A worker, excluding the case referred to in the proviso of the preceding paragraph, must not ride on the working floor of a vehicle for work at height while it is traveling.
- (3) The operator of the vehicle for work at height set forth in the proviso of paragraph (1) must follow the instructions given by the guide set forth in item (i) of the same paragraph and the signals set forth in item (ii) of the same paragraph, and must not operate the vehicle for work at height at a speed exceeding the speed limit set forth in item (iii) of the same paragraph.

Article 194-21 (1) When traveling a vehicle for work at height with a structure of carrying out the traveling operation on a working floor at places other than level and firm places, the employer must take the following measures:

- (i) to take the measures listed in paragraph (1), items (i) and (ii) of the preceding Article; and
 - (ii) to establish in advance, an appropriate working speed limit for the vehicle for work at height in accordance with the height of the working floor and the length of the boom of the vehicle for work at height, and the landform and condition of the ground pertaining to the work, and have the operator operate the vehicle within the speed limit.
- (2) The provisions of paragraph (3) of the preceding Article apply mutatis mutandis to the operator of the vehicle for work at height set forth in the preceding paragraph. In this case, the term "item (iii) of the same paragraph" in paragraph (3) of the same Article is deemed to be replaced with "paragraph (1), item (ii) of the following Article."

(Use of Safety Belts)

- Article 194-22 (1) When the work using a vehicle for work at height (excluding those with the structure in which the working floor raises and lowers only in the direction perpendicular to the ground plane) is carried out, the employer must have the workers on the working floor of the vehicle use safety belts, etc.
- (2) The worker set forth in the preceding paragraph must use a safety belt, etc.

(Periodical Self-inspection)

Article 194-23 (1) As regards a vehicle for work at height, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of a vehicle for work at height which is not used for a period exceeding one year:

- (i) abnormalities in the compression pressure, valve clearance and other abnormalities of the prime mover;
 - (ii) abnormalities in the clutch, transmission, propeller shaft, differential and other abnormalities of power transmission devices;
 - (iii) abnormalities in the drive wheel, idling wheel, vertical trunk roller, belt, tire, wheel bearing and other abnormalities of traveling devices;
 - (iv) abnormalities in the rotation angle of left and right steering wheels, knuckle, rod, arm and other abnormalities of controlling devices;
 - (v) abnormalities in braking capability, brake drum, brake shoe and other abnormalities of braking devices;
 - (vi) abnormalities in the boom, lifting and lowering device, bending device, balance device, working floor and other abnormalities of working devices;
 - (vii) abnormalities in the hydraulic pump, hydraulic motor, cylinder, safety valve and other abnormalities of the hydraulic system.
 - (viii) abnormalities in voltage, amperage and other abnormalities of the electrical system; and
 - (ix) abnormalities in the body, operating device, safety device, locking device, warning device, direction indicator, lightning device and meter.
- (2) As regards the vehicle for work at height set forth in the proviso of the preceding paragraph, the employer must carry out self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 194-24 (1) As regards a vehicle for work at height, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of a vehicle for work at height which is not used for a period exceeding one month:

- (i) abnormalities in the braking device, clutch and steering system;
 - (ii) abnormalities in the working device and hydraulic system; and
 - (iii) abnormalities in the safety device.
- (2) As regards the vehicle for work at height set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 194-25 When having carried out the self-inspection set forth in the preceding two Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Specified Self-inspection)

Article 194-26 (1) The specified self-inspection pertaining to the vehicle for work at height is to be the self-inspection prescribed in Article 194-23.

(2) The provisions of Article 151-24, paragraph (2) apply mutatis mutandis to the worker who has the qualifications prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 45, paragraph (2) of the Act pertaining to vehicle for work at height. In this case, the term "forklift" in Article 151-24, paragraph (2), item (i) is deemed to be replaced with "vehicle for work at height."

(3) As regards the vehicle for work at height (limited to those for which Article 48, paragraph (1) of the Road Transportation Vehicle Act applies) used for traveling, when the employer has carried out an inspection pursuant to the provisions of the same paragraph, they are not required to carry out the self-inspection set forth in Article 194-23 for the parts where the inspection has been carried out.

(4) As regards the application of the provisions of the preceding Article when having a registered inspection agency conduct the specified self-inspection pertaining to a vehicle for work at height, the term "the name of the person who has carried out the inspection" in item (v) of the same Article is deemed to be replaced with "the name of the registered inspection agency."

(5) When having carried out the specified self-inspection pertaining to a vehicle for work at height, the employer must affix an inspection sticker stating the month and year when the specified self-inspection was carried out at a readily visible part of the vehicle.

(Checkup before Commencing the Work)

Article 194-27 When the work by vehicle for work at height is carried out, the employer must inspect the functions of the braking device, controlling device and working device before commencing the work for the day.

(Repairs)

Article 194-28 When having found an abnormality in carrying out the self-inspection set forth in Article 194-23 or Article 194-24, or the inspection set forth in the preceding Article, the employer must immediately make repairs or take other necessary measures.

Section 3 Railway Equipment and Handcart

Subsection 1 General Provisions

(Definitions)

Article 195 The term "railway equipment" as used in this Ministerial Order means all units of equipment including rail tracks and a vehicle attached to a workplace, a power vehicle, a winch, etc. that is driven with the power on rails and used for transporting workers or cargos (excluding those for which the Railway Operation Act (Act No. 65 of 1900), the Railway Business Act (Act No. 92 of 1986) or the Railway Act (Act No. 76 of 1921) applies).

Subsection 2 Rail Tracks

(Weights of Rails)

Article 196 The employer must have the weight of a rail to be equal to or more than the weight listed in the right column of the following Table in accordance with the vehicle body weight listed in the left column of the same Table:

Vehicle Body Weight	Weight of Rail
Less than 5 tons	9 kg
5 tons or more and less than 10 tons	12 kg
10 tons or more and less than 15 tons	15 kg
15 tons or more	22 kg

(Joint of Rails)

Article 197 As regards joint of rails, the employer must securely fix the rails by using joint plates and welding them.

(Laying Rails)

Article 198 As regards laying of rails, the employer must securely fix the rails on the sleeper, concrete bed, etc., by using rail spikes, metal fixture, etc.

(Sleeper)

Article 199 (1) The employer must ensure that the size and intervals of sleepers

are appropriate to the vehicle body weight, the condition of bed, etc., in order to stabilize the rails.

- (2) As regards the sleeper to be used at places where they are susceptible to corrosion or where they are difficult to replace, the employers must ensure that sleepers having sufficient durability are used.

(Bed)

Article 200 As regards rail tracks of which the bed consists of crushed stones, gravel, etc., among rail tracks laid for operating power vehicle with the vehicle body weight of 5 tons or more, the employer must sufficiently harden the bed as well as take measures to have good drainage in order to maintain the sleeper and rails in a safe condition.

(Curved Section)

Article 201 The employer must conform to the requirement set forth in the following items for a curved section of rail tracks:

- (i) to have the radius of a curvature of 10 m or more;
- (ii) to maintain an appropriate cant and a slack; and
- (iii) to provide a guard rail in accordance with the radius of the curvature.

(Gradient of Rail Tracks)

Article 202 As regards the gradient of rail tracks at the section where a power vehicle is used, the employer must set the gradient ratio to fifty thousandth or less.

(Junction of Rail Tracks)

Article 203 The employer must equip the junction of rail tracks with a point and a frog having secure function, and equip the end of the rail tracks with secure wheel stoppers.

(Anchoring Device)

Article 204 When there is a risk of a vehicle overrunning, the employer must install an anchoring device.

(Clearance Between Vehicle and Side Wall)

Article 205 When installing railway equipment inside a tunnel, etc., under construction, the employer must provide a clearance of 0.6 m or more between a vehicle and the side wall or an obstacle on one side of the track in order to prevent the dangers of workers who are passing through coming into contact with vehicles in motion; provided, however, that this does not apply when providing the clearance is difficult due to the small sectional area of the tunnel,

etc., and any of the following measures has been taken:

- (i) to provide a clearly discernible safety zones at appropriate intervals; and
- (ii) to not allow workers enter the place in the traveling direction of a vehicle in operation by installing a signaling device, arranging a watcher, etc.

(Preventive Measures for a Person Riding on a Vehicle from Coming into Contact)

Article 206 When installing railway equipment inside a tunnel, etc., under construction, the employer must maintain necessary distance between a vehicle and the sidewall or the ceiling of the tunnel, etc., and obstacles in order to prevent the person riding on a vehicle from coming into contact with the sidewall or the ceiling of the tunnel, etc., or obstacles; provided, however, that this does not apply when obstacles such as shoring, etc., deformed by the load of the land exist, and measures for easily discerning the obstacles have been taken in order to prevent the dangers of person riding on a vehicle from coming into contact with the obstacles in the tunnel, etc.

(Signaling Device)

Article 207 The employer must install a signaling device in accordance with the condition of railway equipment.

Subsection 3 Vehicle

(Brake of a Power Vehicle)

Article 208 (1) The employer must equip a power vehicle with a hand brake as well as equip a power vehicle that has the vehicle body weight of 10 tons or more with a power brake.

(2) The employer must set the ratio of the pressure of a brake applied to the brake shoe to the pressure of the brake wheel applied to rails to fifty hundredth or more and seventy-five hundredth or less for a power brake and twenty hundredth or more for a hand brake.

(Facilities for a Power Vehicle)

Article 209 The employer must not use a power vehicle unless it conforms to the following requirements:

- (i) to be equipped with signaling device such as a whistle, an alarm bell, etc.;
- (ii) to be equipped with a front lamp and lighting facilities for the driver's cabin when operating the power vehicle at night or underground;
- (iii) to be equipped with a lubricant pressure indicator for an internal combustion locomotive; and
- (iv) to be equipped with an automatic circuit-breaker for an electric locomotive,

and with a lightning arrester for an electric locomotive with an aerial cableway system.

(Operator's Seat of a Power Vehicle)

Article 210 The employer must not use an operator's seat of a power vehicle unless it conforms to the following requirements:

- (i) to have the structure that has a visibility that enables an operator to safely operate the vehicle; and
- (ii) to be equipped with an enclosure, etc., in order to prevent an operator from dangers of falling.

(Worker Carrier)

Article 211 The employer must not use a vehicle exclusively for transporting workers (hereinafter referred to as "worker carrier") unless it conforms to the following requirements:

- (i) to be equipped with such devices as a seat, a grasping rod, etc. that enables workers to ride on the carrier safely;
- (ii) to be equipped with an enclosure and a gate;
- (iii) as regards a worker carrier pulled by a winching system used on inclined rails, to be equipped with facilities enabling an operator of the winch and a person riding on the worker carrier to communicate with each other in an emergency;
- (iv) as regards the worker carrier set forth in the preceding item, to be equipped with an emergency stop device in order to prevent dangers due to cutting off of a wire rope, excessive speed, etc.; and
- (v) as regards a worker carrier used on inclined rails with an inclined angle of 30 degrees or more, to be equipped with a derailment preventive device.

(Wheels)

Article 212 The employer must not use a wheel unless it conforms to the following requirements:

- (i) to have the width which ensures that the tread safely mounts on the rails when the tires with their flanges worn to the maximum extent pass the track part having the maximum gauge;
- (ii) to have a flange thickness which provides sufficient strength even when their flange has been worn to the maximum extent and while allowing the tires to pass through junctions and frogs; and
- (iii) to have a flange height which is higher than that required for preventing tires from derailment and from running on the joint plates, frogs, etc.

(Coupling Device)

Article 213 When coupling vehicles, the employer must use a secure coupling device.

(Coupling of Worker Carriers on Inclined Rails)

Article 214 When using a worker carrier on inclined rails and coupling worker carriers with other worker carriers or to a wire rope socket with a chain or a link, the employer must use chain or wire rope for backup in order to prevent the vehicle from overrunning due to cutting off of the link or the chain.

Subsection 4 Winching System

(Brake of a Winching System)

Article 215 The employer must equip a winching system with a brake that enables to promptly stop a vehicle when the vehicle is applied the maximum load, and maintain the stopped state of the vehicle.

(Wire Rope)

Article 216 The employer must not use a wire rope to be used on a winching system unless it conforms to the following requirements:

- (i) to have the safety coefficient of a wire rope at 6 or higher (10 or more for a wire rope to be used for a worker carrier). In this case, the safety coefficient is to be the value obtained by dividing the value of the breaking load of the wire rope by the maximum value of the load applied to the wire rope; and
- (ii) to be fixed to vehicles by secure method such as using links.

(Prohibition of the Use of an Inadequate Wire Rope)

Article 217 The employer must not use a wire rope falling under any of the following item for a winching system:

- (i) those with 10% or more of element wires cut in one strand;
- (ii) those with the reduction ratio of a diameter exceeding 7% of the nominal diameter;
- (iii) those with kinks; and
- (iv) those with marked deformation or corrosion.

(Depth Indicator)

Article 218 When using worker carrier on an inclined pit line and it is difficult for the operator of the winch to confirm the position of the worker carrier, the employer must equip the winch with a depth indicator that enables the operator to readily confirm the position of the worker carrier.

Subsection 5 Prevention of Dangers Pertaining to the Use of the

Railway Equipment

(Display Method of a Signaling Device)

Article 219 When having installed a signaling device, the employer must establish in advance the display method for the signaling device, and make the display method known to the workers concerned.

(Signals)

Article 220 (1) As regards the operation of the railway equipment, the employer must establish in advance a signaling method for the operation and make the signaling method known to the workers concerned.

(2) The operator of the railway equipment set forth in the preceding paragraph must operate the railway equipment according to the signaling method set forth in the same paragraph.

(Use of Worker Carriers)

Article 221 When transporting workers by the railway equipment, the employer must use a worker carrier; provided, however, this does not apply when transporting small numbers of workers or temporary transporting workers, and the following measures have been taken:

- (i) to equip a vehicle with an enclosure, etc., in order to prevent falling; and
- (ii) to not carry workers to ride with cargo that is likely to collapse, crumble, etc.

(Speed Limit)

Article 222 (1) As regards operation of a vehicle, the employer must set in advance the speed limit for the vehicle in accordance with the weight of rail, gauge, gradient, radius of curvature, etc., and have an operator operate within the speed limit.

(2) The operator of the vehicle set forth in the preceding paragraph must not operate the vehicle at a speed exceeding the speed limit set forth in the same paragraph.

(Riding Capacity)

Article 223 As regards a worker carrier, the employer must set a riding capacity in accordance with the structure of the vehicle, and make it known to the workers concerned.

(Measures to be Taken When Operating a Vehicle by Pushing from Behind)

Article 224 When operating a vehicle inside tunnel, etc., under construction by pushing from behind with a power vehicle, the employer must take the

following measures; provided, however, that this does not apply when the section where the operation is carried out is determined and workers are prohibited from entering the section:

- (i) to place a guide and have the person guide the power vehicle;
- (ii) to equip the first vehicle with a front lamp; and
- (iii) to install a device enabling the guide and the operator to communicate with each other and the guide to give an alarm in an emergency.

(Measures in the Case of Having a Guide Ride a Vehicle)

Article 225 When having a guide set forth in the preceding Article ride a vehicle, the employer must take measures such as having the guide ride the vehicle equipped with an enclosure or ride on the boarding platform in order to prevent the guide from dangers of falling from the vehicle.

(Measures to Be Taken in the Case of Leaving the Operator's Seat)

- Article 226 (1) When the operator of a power vehicle leaves the operator's seat, the employer must have the operator take such measures as applying a brake in order to prevent the vehicle from overrunning.
- (2) When leaving the operator's seat, the operator set forth in the preceding paragraph must take the measures set forth in the same paragraph.

(Prohibition of Leaving the Operating Station)

- Article 227 (1) The employer must not allow an operator of a winch to leave the operating station while the winch is in operation.
- (2) The operator set forth in the preceding paragraph must not leave the operating station while the winch is in operation.

Subsection 6 Periodical Self-inspection

(Periodical Self-inspection)

- Article 228 (1) As regards an electric locomotive, a battery locomotive, an electric vehicle, a battery electric vehicle, an internal combustion locomotive, an internal combustion power vehicle, a steam locomotive and a winching system (hereinafter referred to as "electric locomotive, etc." in this Subsection), the employer must carry out a self-inspection for abnormalities in each part of the electric locomotive, etc., periodically once every period not exceeding three years; provided, however, that this does not apply to the non-use period of electric locomotive, etc., which is not used for a period exceeding three years.
- (2) As regards the electric locomotive, etc., set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for abnormalities in each part of the electric locomotive, etc., before resuming the

operation.

Article 229 (1) As regards the electric locomotive, etc., the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of the electric locomotive, etc., which is not used for a period exceeding one year:

- (i) abnormalities in the motor, control device, brake, automatic circuit-breaker, carriage, coupler, battery, lightning arrester, wiring, connecting device and various meters for an electric locomotive, a battery locomotive, an electric vehicle and a battery electric vehicle;
- (ii) abnormalities in the engine, power transmission device, control device, brake, carriage, coupling device and various meters for an internal combustion locomotive and an internal combustion power vehicle;
- (iii) abnormalities in the cylinder, valve chest, steam pipe, regulating valve, safety valve and various meters for a steam locomotive; and
- (iv) abnormalities in the motor, power transmission device, drum, brake, wire rope, wire rope fittings, safety device and various meters for a winching system.

(2) As regards the electric locomotive, etc., set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the operation.

Article 230 (1) As regards the electric locomotive, etc., the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one month; provided, however, that this does not apply to the non-use period of electric locomotive, etc., which is not used for a period exceeding one month:

- (i) abnormalities in the electric circuit, brake and coupling device for an electric locomotive, a battery locomotive, an electric vehicle and a battery electric vehicle;
- (ii) abnormalities in the brake and coupling device for an internal combustion locomotive and an internal combustion power vehicle;
- (iii) abnormalities in the interior of firebox, fusible plug, spark arrester, water gauge, feed-water supply systems, brake and coupling device for a steam locomotive; and
- (iv) abnormalities in the brake, wire rope, wire rope fittings for a winching system.

(2) As regards the electric locomotive, etc., set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the

matters listed in each item of the same paragraph before resuming the operation.

(Record of Periodical Self-inspections)

Article 231 When having carried out the self-inspections set forth in the preceding three Articles, the employer must record the following matters and preserve the record for three years:

- (i) the date of the inspection;
- (ii) the method of the inspection;
- (iii) the parts inspected;
- (iv) the results of the inspection;
- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Inspection)

Article 232 (1) When the work using railway equipment is carried out, the employer must inspect the following matters before commencing the work for the day:

- (i) functions of the brake, coupling device, warning device, current collector, front lamp, control device and safety device; and
- (ii) leakage of air, etc., from the piping.

(2) The employer must check for any abnormalities in the condition of the rails and the tread for rail track as needed.

(Repairs)

Article 233 When having found an abnormality when the self-inspection set forth in Articles 228 through Article 230, or the inspection set forth in the preceding Article has been carried out, the employer must immediately make repairs.

Subsection 7 Hand Carts

(Rail Tracks for a Hand Cart)

Article 234 (1) The employer must conform to the following requirements for rail tracks in which hand carts are used:

- (i) having the radius of curvature of rail tracks of 5 m or more;
- (ii) having the gradient of one fifteenth or less;
- (iii) having the weight of a rail of 6 kg or more; and
- (iv) having arranged sleepers with a diameter of 9 cm or more at appropriate intervals.

(2) The provisions of Article 197 and Article 232, paragraph (2) apply mutatis mutandis to the rail tracks for a hand cart.

(Installation of Brake)

Article 235 As regards a hand cart to be used on a section of rail tracks with a gradient of ten thousandth or more, the employer must install an effective hand brake onto the hand cart.

(Intervals of Hand Carts)

Article 236 (1) When a worker operates a hand cart, the employer must have the worker carry out the following matters:

(i) to have the intervals between the carts of 6 m or more in sections of uphill gradient rail tracks or horizontal rail tracks and of 20 m or more in sections of downhill gradient rail tracks; and

(ii) not to have the speed of carts exceed 15 km/h when they are operated in sections of downhill gradient rail tracks.

(2) The worker set forth in the preceding paragraph, when operating a hand cart, must carry out the matters listed in each item of the same paragraph.

Chapter III Concrete Form Shoring

Section 1 Materials

(Material)

Article 237 As regards materials for concrete form shoring, the employer must not use those with marked damage, deformation or corrosion.

(Steel Used for the Main Part)

Article 238 As regards steel materials for the main parts of supports, girders or supporting members for girders used for concrete form shoring, the employer must not use those materials unless they conform to the Japanese Industrial Standard G 3101 (Rolled Steel for General Structure), the Japanese Industrial Standard G 3106 (Rolled Steel for Welded Structure), the Japanese Industrial Standard G 3444 (Carbon Steel Tubes for General Structural Purposes), or the Japanese Industrial Standard G 3350 (Cold-formed Light Gauge Steels for Construction Structure), or those materials of which the value of tensile strength is 330 N/mm² or more in the test conducted by the method prescribed by the Japanese Industrial Standard Z2241 (Method of Tensile Test for Metallic Materials), and which have elongation listed in the right column of the following Table in accordance with the type of the steel materials listed in the left column and the value of the tensile strength listed in the middle column of the same Table:

Type of Steel Material	Tensile Strength (Unit: N/mm ²)	Elongation (Unit: Percent)
Steel pipe	330 or more and less than 400	25 or more
	400 or more and less than 490	20 or more
	490 or more	10 or more
Steel plate, gauge steel, flat steel, or light gauge steel	330 or more and less than 400	21 or more
	400 or more and less than 490	16 or more
	490 or more and less than 590	12 or more
	590 or more	8 or more
Bar steel	330 or more and less than 400	25 or more
	400 or more and less than 490	20 or more
	490 or more	18 or more

(Structure of Concrete Form Shoring)

Article 239 As regards a concrete form shoring, the employer must not use the shoring unless it has a solid structure in accordance with the configuration of the concrete form, method of placing concrete, etc.

Section 2 Measures in the Case of Assembling Concrete Form Shoring

(Assembly Drawing)

Article 240 (1) When assembling concrete form shoring, the employer must create an assembly drawing and assemble the concrete form shoring according to the assembly drawing.

(2) The assembly drawing set forth in the preceding paragraph must indicate the arrangement, method of connection and size of the components such as supports, girders, ties and diagonal bracings.

(3) The design of the concrete form shoring pertaining to the assembly drawing set forth in paragraph (1) must comply with the requirements set forth in the following items:

- (i) when the support, the girder or the supporting member of the girder (hereinafter referred to as "support, etc." in this Article) does not have a combined structure, the value of the stress produced on the support, etc., by the design load (meaning adding the load equivalent to the weight of things supported by concrete form shoring to the load of 150 kg or more per 1 m² of the concrete form; hereinafter the same applies in this Article) does not exceed the value of the allowable stress of the materials of the support, etc.
- (ii) when the support, etc., has a combined structure, the design load does not exceed the maximum working load designated by the manufacturer of the support, etc.

- (iii) when a steel tubing frame is used as a support, the concrete form shoring is to have a safe structure even when the horizontal weight applied on its top is equivalent to 2.5% of the design load.
- (iv) when something other than a steel tubing frame is used as a support, the concrete form shoring is to have a safe structure even when the horizontal weight applied on its top is equivalent to 5% of the design load.

(Value of Allowable Stress)

Article 241 The value of allowable stress of materials set forth in paragraph (3), item (i) of the preceding Article is to comply with the following requirements:

- (i) the value of allowable bending stress and allowable compressive stress of steel materials are to be two thirds or less of the value of the yield strength of the steel materials or three quarters of the value of the tensile strength, whichever is smaller;
- (ii) the value of allowable shearing stress of steel materials is to be 38 % or less of the yield strength of the steel materials or three quarters of the value of the tensile strength, whichever is smaller; and
- (iii) the value of allowable buckling stress of steel materials is to be equal to or less than the value obtained by the calculation using the following formula:

When $l/i \leq \Lambda$

$$\bar{\sigma}_c = ((1 - 0.4((l/i)/\Lambda)^2)/v)F$$

When $l/i > \Lambda$

$$\bar{\sigma}_c = (0.29/((l/i)/\Lambda)^2)F$$

In these formulas, l, i, Λ , $\bar{\sigma}_c$, v and F designate the following values.

l: Length of the support (where the support is bound to prevent horizontal displacement, the maximum length between bound points) (Unit: cm)

i: Minimum secondary radius of section of the support (Unit: cm)

Λ : Critical slenderness ratio = $\sqrt{(\pi^2 E/0.6F)}$

However, π : circumference ratio

E: Young coefficient of the steel materials (Unit: N/cm²)

$\bar{\sigma}_c$: Value of allowable buckling stress (Unit: N/cm²)

v: Safety factor = $1.5 + 0.57((l/i)/\Lambda)^2$

F: The value of the yield strength or the value of three quarters of the tensile strength of the steel materials, whichever is smaller (Unit: N/cm²)

- (iv) the value of allowable bending stress, allowable compressive stress and allowable shearing stress of timber in the direction of fiber are to be equal to or less than the value listed in the right column of the following Table in accordance with the kind of timber listed in the left column of the same Table.

Type of timber	Value of Allowable Stress (Unit: N/cm ²)
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	Bending	Compression	Shearing
Japanese red pine, Japanese black pine, Japanese larch, hiba, hinoki, Japanese hemlock, Oregon pine, or Port Oxford cedar	1,320	1,180	103
Japanese cedar, fir, silver fir, abies, red cedar or Western hemlock	1,030	880	74
Oak	1,910	1,320	210
Japanese chestnut, Japanese oak, Japanese beech, or keyaki	1,470	1,030	150

(v) the value of allowable buckling stress of timber in the direction of fiber is to be equal to or less than the value obtained by calculation using the following formula:

When $lk/i \leq 100$; $fk = fc(1 - 0.007(lk/i))$

When $lk/i > 100$; $fk = 0.3fc/(lk/100i)^2$

In these formulas, lk , i , fc and fk designate the following values.

lk : Length of the support (when the support is bound to prevent horizontal displacement, the maximum length between bound points) (Unit: cm)

i : Minimum secondary radius of section of the support (Unit: cm)

fc : Value of allowable compressive stress (Unit: N/cm²)

fk : Value of allowable buckling stress (Unit: N/cm²)

(Measures to Be Taken for Concrete Form Shoring)

Article 242 As regards a concrete form shoring, the employer must comply with the following requirements:

- (i) to take measures to prevent subsiding of the supports, such as the use of square timber, concrete placing, and use of posts;
- (ii) to take measures to prevent sliding of the legs of the supports, such as fixing the leg parts and providing bridge batten of foot post;
- (iii) to use a butt joint or a bell-and-spigot joint for the joint of a support;
- (iv) to fasten connecting and intersecting portions of steel materials with fittings such as bolts and clamps;
- (v) when concrete forms have curved surfaces, to take measures to prevent floating of the concrete form, such as use of stays;
- (v)-2 when H-steel or I-steel (hereinafter referred to as "H-steel, etc." in this item) is used as conncring beams for sleepers and square timbers and there is a risk of deformation of the section of the H-steel, etc., due to the concentration of load on the point of connection between the H-steel, etc., and supports and jacks, etc., to attach reinforcing materials to the points of

- connection;
- (vi) for those using steel pipes (excluding adjustable tubular pole shores; hereinafter the same applies in this Article) as supports, the parts using the steel pipes is to conform to the requirements set forth in the following sub-items:
 - (a) to equip horizontal collar braces in two directions for each height of 2 m or less, and prevent displacement of the horizontal collar braces;
 - (b) when putting girders or sleepers on the top of the steel pipes, to fix an end plate of steel to the top and fasten to the girders or sleepers;
 - (vii) for those using adjustable tubular pole shores as supports, the adjustable tubular pole shores are to conform to the requirements set forth in the following sub-items:
 - (a) not to connect three or more adjustable tubular pole shores;
 - (b) when connecting adjustable tubular pole shores, to connect them using four or more bolts or exclusively designed fittings;
 - (c) when the height exceeds 3.5 m, to take measures set forth in (a) of the preceding item;
 - (viii) for those using tubular steel forms as supports, parts using the tubular steel forms are to conform to the requirements of the following sub-items:
 - (a) to equip cross bracings between the tubular steel forms;
 - (b) to equip horizontal collar braces for each five frames or less in the direction of the side surface and the form surface of the concrete form shoring and in the direction of the cross bracings at the top layer and for each five layers or less, as well as prevent displacement of the horizontal collar braces;
 - (c) to equip ledger forms in the direction of the cross bracings, at both ends of the concrete form shoring in the direction of the form surface and for each five frames or less at the top layer and for each five layers or less;
 - (d) to take the measures set forth in item (vi), (b);
 - (ix) for those using built-up steel props as supports, the parts using the built-up steel props is to conform to the requirements set forth in the following sub-items:
 - (a) to take the measures set forth in item (vi), (b);
 - (b) when the height exceeds 4 m, to equip horizontal collar braces in two directions for each height of 4 m or less, and prevent the displacement of the horizontal collar braces;
 - (ix)-2 for those using H-steel as supports, to take the measures set forth in item (vi), (b) for the parts using H-steel sections;
 - (x) for those using timber as supports, the parts using timber is to conform to the requirements set forth in the following sub-items:
 - (a) to take the measures set forth in item (vi), (a);

- (b) when connecting two or more timbers, to connect them using two or more reinforcements;
- (c) when putting girders or sleepers on the top of the timber, to use reinforcements to fix the top to the girders or sleepers;
- (xi) for those consisting of girders, they are to conform to the requirements set forth in the following sub-items:
 - (a) to fix both ends of the girders to supporting members in order to prevent the girders from sliding and coming off;
 - (b) to equip collar braces between the girders in order to prevent the girders from side buckling.

(Step-Like Concrete Form Shoring)

Article 243 As regards concrete form shoring to be assembled in the shape of steps using planking, square timber, etc., the employer must comply with the requirements set forth in the following items, in addition to the requirements set forth in each item of the preceding Article:

- (i) not to use two or more layers of planking, square timbers, etc., excluding the case where it is unavoidable due to the configuration of the concrete form;
- (ii) when connecting planking, square timbers, etc., to tightly bind the planking, square timbers, etc.; and
- (iii) to fix supports to the planking, square timbers, etc.

(Concrete Placing Work)

Article 244 When concrete placing work is carried out, the employer must comply with the following requirements:

- (i) to inspect the concrete form shoring pertaining to the work before commencing the work for the day, and make repairs when having found an abnormality; and
- (ii) to have in place measures for suspending work when any abnormality is found on the concrete form shoring during work, in advance.

(Work of Assembling Concrete Form Shoring)

Article 245 When carrying out the work of assembling or dismantling concrete form shoring, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers regarding the implementation of the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow; and
- (iii) when raising or lowering the materials, instruments or tools, to have workers use a lifting rope, lifting bag, etc.

(Appointment of an Operations Chief of Assembling the Concrete Form Shoring)

Article 246 As regards the work set forth in Article 6, item (xiv) of the Order, the employer must appoint an operations chief of assembling the concrete form shoring from the persons who have completed the skill training course for operations chief of assembling the concrete form shoring.

(Duties of the Operations Chief of Assembling the Concrete Form Shoring)

Article 247 The employer must have the operations chief of assembling the concrete form shoring carry out the following matters:

- (i) to decide the work method and directly supervise the work;
- (ii) To inspect defects in materials, instruments and tools, and remove those defective; and
- (iii) to monitor the use of safety belt, etc., and safety helmet during work.

Chapter IV Prevention of Explosions and Fires

Section 1 Prevention of Explosions and Fires Due to Melted High-temperature Substances

(Structure of Facilities Handling High-temperature Substances)

Article 248 As regards furnace and other facilities handling a large quantity of high-temperature substances, the employer must ensure that they have a structure necessary to prevent fires.

(Melted High-temperature Substance Handling Pits)

Article 249 In order to prevent steam explosions, the employer must take the following measures for melted high-temperature minerals (hereinafter referred to as "melted high-temperature substance") handling pits (excluding those processing high-temperature slag with water):

- (i) to have the structure enabling to prevent underground water from penetrating inside the pit; provided, however, that this does not apply when the pits are equipped with facilities that can discharge the underground water stagnated inside the pit;
- (ii) to install partitions or other equipment that can prevent work-use water or rain water from penetrating inside the pit.

(Structure of Buildings)

Article 250 In order to prevent steam explosions, the employer must take the following measures for buildings which have facilities handling melted high-temperature substances inside:

- (i) to have floor surface that is structured to prevent the stagnation of water;
and
- (ii) to have the roof, wall, window, etc., that is structured to prevent rainwater from penetrating inside the building.

(Work of Handling Melted High-temperature Substances)

Article 251 When the work of handling melted high-temperature substances (excluding work of processing high-temperature slag with water and work of disposing the slag) is carried out, in order to prevent steam explosions, the employer must not carry out the work unless having confirmed that the pit set forth in Article 249, the floor surface of building set forth in the preceding Article, and other facilities handling melted high-temperature substance are free of stagnant water, or are not wet.

(Water Processing of High-temperature Slag)

Article 252 As regards places where high-temperature slag is processed with water, or is disposed, in order to prevent steam explosions, the employer must take the following measures; provided, however, this does not apply when water granulation process is performed:

- (i) the place where high-temperature slag is processed with water, or is disposed, is to be a place with good drainage; and
- (ii) the place where high-temperature slag is disposed is to indicate that fact.

Article 253 When carrying out the work of processing high-temperature slag with water, or work of disposing the slag, in order to prevent steam explosions, the employer must not carry out the work unless having confirmed that the places set forth in the preceding Article are free of stagnant water; provided, however, that this does not apply when water granulation process is performed.

(Work Putting Metal Scraps in the Furnace)

Article 254 When carrying out the work of putting metal scraps in a furnace, in order to prevent steam explosions and other explosions, the employer must not carry out the work unless having confirmed that the metal scraps does not contain water, gunpowder, dangerous goods (meaning those listed in the Appended Table 1 of the Order; the same applies hereinafter), airtight containers, etc.

(Prevention of Burns)

Article 255 (1) As regards a blast furnace, a cupola, glass melting furnace and other places where the work of handling a large quantity of high-temperature substances is carried out, the employer must take appropriate measures in

order to prevent burns or other dangers due to the scattering, outflow, etc., of the high-temperature substances.

- (2) The employer must provide the places set forth in the preceding paragraph with appropriate personal protective equipment in order to prevent burns and other dangers.
- (3) A worker, when carrying out the work set forth in paragraph (1), must use the personal protective equipment set forth in the preceding paragraph.

Section 2 Handling of Dangerous Goods

(Measures in the Case of Manufacture of Dangerous Goods)

Article 256 (1) When manufacturing or handling dangerous goods, the employer must comply with the following requirements in order to prevent explosions or fires:

- (i) as regards explosive substances (meaning those listed in the Appended Table 1, item (1) of the Order), to not bring them close to fire or other things that are likely to become a fire source, or heat, rub them or give a shock to them without reason;
 - (ii) as regards combustible substances (meaning those listed in the Appended Table 1, item (1) of the Order), to not bring them close to fire or other things that are likely to become a fire source, or make them come into contact with substances that accelerate oxidation or with water, heat them, or give a shock to them, in accordance with their types, without reason;
 - (iii) as regards oxidizing substances (meaning those listed in the Appended Table 1, item (3) of the Order; the same applies hereinafter), to not make them come into contact with substances which are likely to accelerate decomposition, or heat, rub them, or give a shock to them without reason;
 - (iv) as regards inflammable substances (meaning those listed in the Appended Table 1, item (4) of the Order; the same applies hereinafter), to not bring them close to fire or other things that are likely to become a fire source, or pour them, make them evaporate, or heat them without reason; and
 - (v) to keep the places that have facilities that manufacturers or handles the dangerous goods clean and organized at all times, and to not place flammable or oxidizing substances in the places without reason.
- (2) A worker, in the case referred to in the preceding paragraph, must comply with the requirements set forth in each item of the same paragraph.

(Operations Supervisor)

Article 257 When carrying out the work of manufacturing or handling dangerous goods (excluding the work listed in Article 6, item (ii) or item (viii) of the Order), the employer must designate a supervisor for the work, and have the

supervisor direct the work as well as carry out the following matters:

- (i) to inspect as needed the facilities and their attached facilities that manufacture or handle the dangerous goods, and when having found an abnormality, to immediately take necessary measures;
- (ii) to inspect as needed the temperature, humidity, conditions of shading of light and ventilation, etc., in the place that has the facilities and their attached facilities where the dangerous goods are manufactured or handled, and when having found an abnormality, to immediately take necessary measures;
- (iii) beyond what is set forth in the preceding items, to inspect as needed how handling dangerous goods are handled, and when having found an abnormality, to immediately take necessary measures; and
- (iv) to keep records of the measures taken pursuant to the provisions of the preceding items.

(Pouring Inflammable Substances Using a Hose)

- Article 258 (1) When carrying out the work of pouring inflammable substances or combustible gas (meaning combustible gas listed in the Appended Table 1, item (5) of the Order; the same applies hereinafter) which are in liquid form into chemical facilities (excluding piping), a tank vehicle, a tank car, a drum, etc., using a hose, the employer must not carry out the work unless having confirmed that the joining parts of the hose are firmly fastened, or coupled.
- (2) A worker, when engaging in the work set forth in the preceding paragraph, must not carry out the work unless they conform to the requirements set forth in the same paragraph.

(Pouring Kerosene into Facilities with Residual Gasoline)

- Article 259 (1) When carrying out the work of pouring kerosene or light oil into chemical facilities (limited to the facilities that store dangerous goods, and excluding piping; the same applies in the following Article), a tank vehicle, a tank car, a drum, etc., in which residual gasoline exists, the employer must not carry out the work unless having confirmed in advance, that the inside of the chemical facilities, etc., has been made safe by washing, replacing gasoline with inert gas, etc.
- (2) A worker, when engaging in the work set forth in the preceding paragraph, must not carry out the work unless they conform to the requirements set forth in the same paragraph.

(Handling of Ethylene Oxide and Other Chemicals)

- Article 260 (1) When carrying out the work of pouring ethylene oxide, acetaldehyde or propylene oxide into chemical facilities, a tank vehicle, a tank

car, a drum, etc., the employer must not carry out the work unless having replaced the gas or vapor other than inert gas in the chemical facilities, etc., by inert gas in advance.

- (2) When storing ethylene oxide, acetaldehyde or propylene oxide in chemical facilities, a tank vehicle, a tank car, a drum, etc., the employer must have the gas or vapor other than inert gas in the chemical facilities, etc., replaced by inert gas at all times.

(Prevention of Explosions or Fires by Means of Ventilation)

Article 261 As regards places where there is a risk of explosions or fires due to existing vapor of inflammable substances, flammable gas or flammable dust, the employer must take measures such as ventilation, airing, or removal of dust in order to prevent the explosions or fires.

(Work of Gas Welding at a Place Where Ventilation Is Insufficient)

Article 262 (1) When carrying out the work of welding, fusing, or heating metal using flammable gas and oxygen (hereinafter referred to as "gas, etc." in this Article and the following Articles) at places where ventilation or airing is insufficient, the employer must take the following measures in order to prevent explosions, fires or burns due to leakage or discharge of gas, etc., at the places:

- (i) as regards hoses and torches for gas, etc., those that do not have a risk of gas leakage due to their damages, wear, etc. are to be used;
- (ii) as regards connection of connecting parts between hoses and torches and between hoses of gas, etc., to fasten the parts securely with hose bands, hose clips, etc.;
- (iii) in supplying gas, etc., to hoses of gas, etc., to supply the gas, etc., after mounting on the hoses a blowpipe that is set so as not to discharge gas, etc., or a firm stop plug in advance;
- (iv) to display an indication for preventing operational error of the supply of gas, etc., on the valve or cock of the supply inlet of gas, etc., of the hose being used, by attaching a name tag of the operator who uses the hose connected with the valve or cock, etc.;
- (v) when carrying out the work of fusing, to provide sufficient ventilation to prevent burns due to the discharge of excessive oxygen from the blowpipes; and
- (vi) when leaving the work place due to suspension or completion of the work, to shut the valve or cock of the supply inlet of gas, etc., and dismantle the hose of gas, etc., from the supply inlet of gas etc., or remove the hose of gas etc., to a place where there is sufficient natural ventilation or sufficient air supply is made.

- (2) A worker, when engaging in the work set forth in the preceding paragraph,

must not carry out the work unless they conform to the requirements set forth in each item of the same paragraph.

(Handling of Gas Containers)

Article 263 As regards gas containers used for the work of gas welding, etc., (meaning the work listed in Article 20, item (x) of the Order; the same applies hereinafter) the employer must comply with the requirements set forth in the following items:

- (i) to not install, use, store or leave the gas containers in the following places:
 - (a) places where there is insufficient airing or ventilation;
 - (b) places where fires are used and their vicinities;
 - (c) places where gun powder, dangerous goods, or other explosive or combustible substances or a large quantity of flammable substances are manufactured or handled and their vicinities;
- (ii) to keep the temperature of the containers at 40 degrees or lower;
- (iii) to maintain the containers in such a way that they are not likely to fall;
- (iv) to not give a shock to the containers;
- (v) to cap the containers when transporting them;
- (vi) to remove oil, etc., and dust adhering to the mouthpiece of the containers when using them;
- (vii) to open and close the valve of the containers gently; and
- (viii) to place a container for dissolved acetylene in an upright position; and
- (ix) to clearly distinguish containers before use or in use from other containers.

(Prevention of Ignition Due to Contact with Different Types of Substances)

Article 264 When there is a risk of ignition or explosion due to contact with different types of substances, the employer must not store them close to each other, or load them on the same carrier; provided, however, this does not apply when measures to prevent the substances from coming into contact with each other are taken..

(Workplace that Has a Risk of Fire)

Article 265 The employer must ensure that places, equipment, etc., where the work of nap raising, rag opening, etc., or work of handling a great quantity of cotton, wool, rags, excelsior, straw, wastepaper and other flammable substances, have appropriate location or structure to prevent fires.

(Prevention of Spontaneous Combustion)

Article 266 When piling up substances that have the risk of spontaneous combustion, the employer must take measures to prevent the temperature of the substances from rising to a dangerous level.

(Disposal of Rags Soaked with Oil)

Article 267 As regards rags, wastepaper, etc., soaked with oil or printing ink, the employer must take measures for preventing fire, such as putting them in a non-combustible covered container.

Section 3 Chemical Facilities

(Buildings in Which Chemical Facilities Are Installed)

Article 268 As regards a building in which chemical facilities (excluding piping) are installed, the employer must use non-combustible materials to construct the walls, pillars, floors, girders, roofs, stairs, etc. (limited to those parts adjacent to the chemical facilities).

(Prevention of Corrosion)

Article 269 As regards parts of chemical facilities (excluding valves or cocks) that come into contact with dangerous goods or substances with a flash point of 65 degrees or higher (hereinafter referred to as "dangerous goods, etc"), the employer must take measures such as constructing the parts with corrosion-resistant materials and providing linings, in accordance with the type, temperature or concentration, etc., of the dangerous goods, etc., in order to prevent explosions or fires due to extreme corrosion of the parts by the dangerous goods, etc.

(Joining Parts of Cover Plates)

Article 270 As regards the joining parts of a cover plate, a flange, a valve, a cock, etc., of chemical facilities, the employer must take measures such as using gaskets to tightly attach the joint surfaces in order to prevent explosions or fires due to leakage of dangerous goods, etc., from the joining parts.

(Indicating the Opening and Closing Direction of Valves)

Article 271 (1) As regards the valves or cocks of chemical facilities or the switches, push buttons, etc., for operating the valves or cocks, the employer must take the following measures in order to prevent explosions or fires due to an operational error of the valves and cocks:

- (i) to indicate the direction of opening and closing them; and
- (ii) to distinguish them by color, shape, etc.

(2) The measure under item (ii) of the preceding paragraph must not be distinction by color only.

(Materials of Valves)

Article 272 The employer must conform to the following requirements for the valves or cocks of chemical facilities:

- (i) to make the valves or cocks with durable materials in accordance with the frequency of opening and closing the valves or cocks, or the type, temperature, concentration, etc., of the dangerous goods, etc., pertaining to manufacturing or handling of chemicals; and
- (ii) to provide double valves or cocks between the strainers, etc. that are frequently opened or removed during the use of chemical facilities and the nearest chemical facilities (excluding piping; hereinafter the same applies in this item); provided, however, that this does not apply when devices enabling to confirm that the valves or cocks between the strainers, etc., and the chemical facilities have been securely closed are provided.

(Indication of Types of Raw Materials Supplied)

Article 273 The employer must display at a readily visible place for workers, the type of raw materials, the facilities in which the raw materials are supplied and other necessary matters in order to prevent explosions or fires due to an error in supplying raw materials by workers who supply raw materials to chemical facilities (excluding piping).

(Installing Measuring Instruments)

Article 273-2 As regards special chemical facilities, the employer must equip thermometers, flow meters, pressure gauges and other measuring instruments necessary to discover abnormal conditions in the facilities at an early stage.

(Installation of an Automatic Warning Device)

Article 273-3 (1) As regards special chemical facilities (excluding those facilities which manufacture or handle dangerous goods, etc., in a quantity less than the standard provided by the Minister of Health, Labour and Welfare), the employer must install an automatic warning device necessary to discover abnormal conditions in the facilities at an early stage.

(2) When it is difficult to take the measures prescribed in the preceding paragraph, the employer must take measures such as placing a watcher and having the person monitor the special chemical facilities during operation.

(Installation of an Emergency Stop Device)

Article 273-4 (1) As regards special chemical facilities, the employer must install devices for coping with abnormal conditions, such as a device for cutting off feeding of raw materials or for discharging products, etc., and devices for feeding inert gas, cooling water, etc., in order to prevent explosions or fires due to abnormal conditions.

- (2) Valves or cocks to be equipped in the devices set forth in the preceding paragraph must conform to the requirements set forth in the following items:
- (i) to have the function that reliably operates;
 - (ii) to maintain the valves or cocks in a condition that enables smooth operation at all times; and
 - (iii) to provide valves or cocks that enable safe and accurate operation.

(Reserved Power Sources)

Article 273-5 (1) The employer must conform to the requirements set forth in the following items regarding power sources used for special chemical facilities, their piping or their attached facilities:

- (i) to provide reserved power sources that enable immediate use, to prevent explosions or fires due to abnormalities of regular power sources; and
 - (ii) to provide locking, distinction by color, sorting by shape, etc., on valves, cocks, switches, etc., in order to prevent operational errors.
- (2) The measures under item (ii) of the preceding paragraph must not be distinction by color only.

(Work Rules)

Article 274 When carrying out the work using chemical facilities or their attached facilities, the employer must establish the rules for the facilities on the following matters to prevent explosions or fires, and have workers carry out work according to the rules:

- (i) operation of valves, cocks, etc. (limited to those used to supply raw materials to or to take products out from chemical facilities (excluding piping; hereinafter the same applies in this item));
- (ii) operation of cooling devices, heating devices, stirring devices and compressors;
- (iii) monitoring and adjustment of measuring instruments and the control device;
- (iv) adjustment of safety devices such as safety valves and the emergency stop device and the automatic warning device;
- (v) inspection of joining parts of cover plates, flanges, valves, cocks, etc., for leakage of dangerous goods, etc.;
- (vi) collection of samples;
- (vii) for specified chemical facilities, work methods during the suspension of operation and at the time of the resumption of operation when operations are temporarily or partially suspended;
- (viii) emergency measures in an abnormal situation; and
- (ix) beyond what is set forth in the preceding items, necessary measures for preventing explosions or fires.

(Evacuation)

Article 274-2 (1) If there is imminent danger of an industrial accident due to explosion, fire, etc., owing to a large quantity of leakage of dangerous goods, etc., from chemical facilities, the employer must immediately suspend the operation and evacuate workers to a safe place.

(2) In the case referred to in the preceding paragraph, the employer must prohibit persons other than those concerned from entering the workshop, etc., and display a notice to that effect at a readily visible place, until having confirmed that there is no danger of an industrial accident for workers due to dangerous goods, etc.

(Modifications and Repairs)

Article 275 In modifying, repairing or cleaning the chemical facilities or their attached facilities, the employer must conform to the requirements set forth in the following items when the work of disassembling the facilities are carried out or the work is carried out inside the facilities:

- (i) to decide in advance the method and procedures of the work, and make them known to the workers concerned;
- (ii) to designate a supervisor of the work, and have the supervisor direct the work;
- (iii) to doubly close the valves or cocks, or apply baffles to the valves or cocks as well as close them in order to prevent dangerous goods, etc. from leaking or high-temperature steam from being discharged inside the workplace;
- (iv) to lock the valves, cocks or baffles set forth in the preceding item and display a notice stating that the valves, cocks or baffles must not be opened, or placing a watcher; and
- (v) in the case that the baffle, etc., set forth in item (iii) is to be removed and when there is risk of dangerous goods, etc., or high-temperature steam leaking or discharging, to take measures such as confirming in advance, the existence of the dangerous goods, etc., or high-temperature steam between the baffle and the nearest valve or cock.

Article 275-2 When carrying out the work set forth in the preceding Article, the employer must measure the concentration of the vapor of inflammable substances or the combustible gas at the workplace and its surrounding, as needed.

(Periodical Self-inspection)

Article 276 (1) As regards chemical facilities (excluding piping; hereinafter the same applies in this Article) and their attached facilities, the employer must

carry out a self-inspection for the following matters periodically once every period not exceeding two years; provided, however, that this does not apply to the non-use period of chemical facilities and their attached facilities which are not used for a period exceeding two years:

- (i) existence of the substances inside the facilities that may cause explosions or fires;
 - (ii) existence of marked damage, deformation or corrosion on internal and external surfaces of the facilities;
 - (iii) condition of cover plates, flanges, valves, cocks, etc.;
 - (iv) functions of safety devices, such as safety valves and emergency stops, and of automatic warning devices;
 - (v) functions of cooling devices, heating devices, stirring devices, compressors, measuring instruments and the control device;
 - (vi) functions of reserve power sources; and
 - (vii) beyond what is set forth in the preceding items, matters especially necessary for preventing explosions or fires.
- (2) As regards the chemical facilities and their attached facilities set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the use.
- (3) When having found an abnormality in the chemical facilities and their attached facilities as a result of the self-inspection set forth in the preceding two paragraphs, the employer must not use the facilities unless having made repairs or taken other necessary measures.
- (4) When having carried out the self-inspection set forth in paragraph (1) and (2), the employer must record the following matters and preserve the record for three years:
- (i) the date of the inspection;
 - (ii) the method of the inspection;
 - (iii) the parts inspected;
 - (iv) the results of the inspection;
 - (v) the name of the person who has carried out the inspection; and
 - (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Inspection before Commencing Use)

Article 277 (1) When using chemical facilities (excluding piping; hereinafter the same applies in this Article) or their attached facilities for the first time, after having dismantled and remodeled or repaired them, or after a non-use period of one month or longer, the employer must not use the facilities unless they have confirmed that there is no abnormality by carrying out the inspection on

the matters listed in each item of paragraph (1) of the preceding Article.

- (2) In addition to the case referred to in the preceding paragraph, when changing the use of chemical facilities or their attached facilities (including changing the type of raw materials used; hereinafter the same applies in this paragraph), the employer must not use the facilities unless they have confirmed that there is no abnormality by inspecting the facilities for the matters listed in paragraph (1), item (i), item (iv) and item (v) of the preceding Article and the parts modified for the changes in use.

(Safety Device)

Article 278 (1) As regards containers in which the pressure of gas is likely to exceed the atmospheric pressure due to an abnormal chemical reaction or other abnormal conditions, the employer must not use them unless they are provided with a safety valve or other alternative safety devices; provided, however, that this does not apply to the containers having a volume of 0.1 m³ or less.

- (2) As regards a safety valve or alternative safety device for the containers set forth in the preceding paragraph, in order to prevent explosions or fires due to dangerous goods (if the containers set forth in the preceding paragraph are chemical facilities (excluding piping) that manufacture or handle substances having a flash point of 65 degrees or higher at the temperature equal to or higher than the flash point, the substances; hereinafter the same applies in this paragraph) discharged by the operation of the safety valve or alternative safety device, the employer must use the safety valve or alternative safety device having an airtight structure, or one with the structure that enables discharged dangerous goods to be conveyed to a safe place or to be safely disposed by burning, absorbing, etc.

Section 4 Control of Fires

(Prohibition of Use of Fire at Places Where Dangerous Goods Exist)

Article 279 (1) The employer must not use machines, etc., or fires that produce sparks or arcs, or that reach a high temperature and are liable to become an ignition source at places where there is a risk of explosion or fire due to the existence of combustible dust other than dangerous goods, gunpowder, a large quantity of easily flammable substances or dangerous goods.

- (2) A worker must not use machines, etc., or fires that have the risk of becoming an ignition source set forth in the preceding paragraph at places set forth in the same paragraph.

(Electric Machine and Appliance Used in Places that Have a Risk of Explosion)

Article 280 (1) When using electric machines and appliances (meaning those

other than wiring and movable electric cable among machines or instruments that conduct electricity such as a motor, transformer, cable connector, switch, distribution board or switch board and other equipment; the same applies hereinafter) at a place where the vapor of flammable substance or flammable gas is liable to reach the explosive concentration even after the measures set forth in Article 261 are taken, the employer must not use them unless they are explosion-proof electric machines and appliances that have explosion-proof function in accordance with the types of the vapors or gases.

(2) A worker must not use electric machines and appliances other than the explosion-proof electric machines and appliances set forth in the preceding paragraph at places set forth in the same paragraph.

Article 281 (1) As regards places set forth in Article 261, when using an electric machine and appliance at a place where flammable dust (excluding deflagration dust such as the dust of magnesium and aluminum) is liable to reach the explosive concentration even after the measures set forth in the same Article have been taken, the employer may not use electric machine and appliance unless it is an explosion-proof electric machine and appliance that has explosion-proof function for the dust.

(2) A worker must not use an electric machine and appliance other than the explosion-proof machine and appliance set forth in the preceding paragraph at places set forth in the same paragraph.

Article 282 (1) When using an electric machine and appliance at places where there is a risk of explosion due to existing deflagration dust, the employer must not use the electric machine and appliance unless it is an explosion-proof electric machine and appliance that has an explosion-proof function for the dust.

(2) A worker must not use an electric machine and appliance other than the explosion-proof electric machine and appliance set forth in the preceding paragraph at places set forth in the same paragraph.

(Exclusion from Application for Repair Work)

Article 283 The provisions of the preceding four Articles do not apply to the case of carrying out temporary work such as repairs or alterations, and taking measures which are not likely to cause explosion or fire.

(Inspection)

Article 284 When using an explosion-proof electric machine and appliance set forth in Articles 280 through 282 (limited to movable or portable types) pursuant to the provisions of those Articles, the employer must inspect the

explosion-proof electric machine and appliance, and the condition of the outer part of the movable electric cable connected to the machine and the connecting part of the machine and the cable before commencing the use for the day, and when having found any abnormality, immediately make repairs.

(Welding of Piping or a Container with Residual Oil)

Article 285 (1) As regards piping or a tank, a drum or other containers in which inflammable oil or combustible dust other than dangerous goods, or dangerous goods are likely to exist, the employer must not have a worker carry out welding, fusing or other work using fire, or work that is likely to produce sparks unless measures for preventing explosions or fires, such as removing, etc., the inflammable oil or combustible dust other than the dangerous goods, or dangerous goods have been taken in advance.

(2) A worker must not carry out the work set forth in the preceding paragraph until the measures set forth in the same paragraph have been taken.

(Welding at Places Where Ventilation Is Insufficient)

Article 286 (1) When carrying out the work of welding, fusing, heating metal or other work using fire, or dry grinding using grinding wheels, chipping using a chisel or other work that is likely to produce sparks at a place where ventilation is insufficient, the employer must not use oxygen for the purpose of airing or ventilation.

(2) A worker must not use oxygen for the purpose of airing or ventilation in the case referred to in the preceding paragraph.

(Anti-Static Work Clothes)

Article 286-2 (1) When carrying out the work at the locations set forth in Article 280 and Article 281 and the places set forth in Article 282, the employers must take measures to eliminate static electricity from the bodies and work clothes, etc., of workers, such as ensuring that the worker engaging in the work wear anti-static work clothes and anti-static work shoes.

(2) A worker, when carrying out the work set forth in the preceding paragraph, must not carry out the work unless they conform to the requirements set forth in the same paragraph.

(3) The provisions of the preceding two paragraphs do not apply when carrying out temporary work such as repair or alteration, and measures which are not likely to cause explosion or fire have been taken.

(Removal of Static Electricity)

Article 287 In using the following equipment, when there is a risk of explosion or fire due to static electricity, the employer must use a grounding connection, use

a neutralizer, provide humidity, or use a neutralization apparatus which is unlikely to become an ignition source, and take other measures for eliminating static electricity:

- (i) the equipment for pouring dangerous goods into a tank vehicle, a tank car, a drum, etc.;
- (ii) the equipment for storing dangerous goods, such as a tank vehicle, a tank car, a drum, etc.;
- (iii) the equipment for applying paints, adhesives, etc., containing inflammable substances;
- (iv) drying equipment (drying rooms and dryers for heat-drying with a heat source substances other than gunpowder prescribed in Article 2, paragraph (1) of the Explosive Control Act (Act No. 149 of 1950); the same applies hereinafter) which heat-dry dangerous goods or materials to be dried that produce dangerous goods (hereinafter referred to as "drying equipment for dangerous goods"), or their attached equipment;
- (v) the equipment for spouting, sifting, etc., combustible powdery substances;
- (vi) beyond the equipment set forth in the preceding items, chemical facilities (excluding piping) or their attached facilities.

(Prohibition of Entry)

Article 288 The employer must provide an appropriate indication that use of fire is prohibited at places where there is danger of fire or explosion, and prohibit persons other than those concerned from entering especially dangerous places.

(Fire Extinguishing Equipment)

Article 289 (1) The employer must provide buildings, places where chemical facilities (excluding piping) or drying equipment is installed, and places where dangerous goods, inflammable oil other than dangerous goods, or other substances that are likely to cause explosion or fire are handled (hereinafter referred to as "buildings, etc." in this Article) with fire extinguishing equipment at appropriate locations.

(2) The fire extinguishing equipment set forth in the preceding paragraph must have the capacity corresponding to the nature of explosions or fires expected from the size or floor space of buildings, etc., type of substances handled in the buildings, etc., and other factors.

(Fire Prevention Measures)

Article 290 The employer must provide a space necessary for fire protection between a furnace, heating device, iron stack or other equipment that is likely to cause fire and a building or other flammable objects, or protect the flammable objects using insulating materials.

(Fire Prevention at Places Where Fire is Used)

- Article 291 (1) The employer must provide smoking rooms and places where stoves or other places fire is used with equipment necessary to prevent fires.
- (2) A worker must not perform acts such as smoking, warm themselves, or dry things without reason.
- (3) A person who has used fire must ensure that the fire has been completely extinguished after use.

(Ash-Dumping Spot)

Article 292 The employer must install an ash-dumping spot at places where there is no danger of fire spreading, or construct the spot using incombustible materials.

Section 5 Drying Equipment

(Building with a Drying Equipment for Dangerous Goods Installed)

Article 293 The employer must ensure that the part of a building in which drying equipment for dangerous goods (limited to a drying room; hereinafter the same applies in this Article) is installed in a single-storied building; provided, however, that this does not apply to the building where there is no floor right above the floor where the drying equipment is installed, or the building is fire-proof or semi-fire-proof.

(Structure of Drying Equipment)

Article 294 The employer must conform to the requirements set forth in the following items; provided, however, that this does not apply to those that are unlikely to cause explosion or fire due to the type of materials to be dried, the extent of heat-drying, the type of heat source, etc.:

- (i) to construct the outer surface of the drying equipment using incombustible materials;
- (ii) to construct the inner surface of the drying equipment (excluding that for heat-drying organic peroxide substances) and shelves, frames etc., in the equipment using incombustible materials;
- (iii) the side and bottom part of the drying equipment for dangerous goods are to have a solid structure;
- (iv) for the drying equipment for dangerous goods, to construct the top of the equipment with lightweight materials in accordance with the surrounding conditions, or provide an effective explosion door, explosion hole, etc.;
- (v) for the drying equipment for dangerous goods, to have a structure that enables discharging gas, vapor or dust generated during drying operations

- that is liable to cause dangers of explosion or fire to a safe place;
- (vi) for the drying equipment that use liquid fuel or flammable gas as fuel for heat sources, to have a structure that enables providing ventilation for the combustion chamber or other locations where ignition occurs in order to prevent explosion or fire at the time of ignition;
 - (vii) to have the inside of the drying equipment be of a structure that can be cleaned easily;
 - (viii) to provide the openings of the drying equipment, such as peep windows, manholes, and exhaust holes at places where spreading of fire can be prevented when the equipment is ignited, and the openings to be of the structure that can be immediately shut tightly when required;
 - (ix) to equip the drying equipment with a device for measuring the internal temperature as needed and a device for adjusting the temperature to a safe level, or a device for automatically controlling the temperature;
 - (x) to not use open fire as a heat source for the drying equipment for dangerous goods; and
 - (xi) when using open fire as a heat source for the drying equipment other than those for dangerous goods, to provide an effective cover or partition in order to prevent materials to be dried from being ignited by the flames or scattered sparks.

(Electric Equipment Attached to Drying Equipment)

- Article 295 (1) As regards wiring and switch connected to an electric heater, a motor, an electric lamp, etc., attached to a drying equipment, the employer must use those exclusive for the equipment.
- (2) The employer must not provide an electric machine and appliance or wiring that are likely to become an ignition source for dangerous goods by generating electric sparks inside the drying equipment for dangerous goods.

(Use of Drying Equipment)

- Article 296 When carrying out the work using a drying equipment, the employer must comply with the requirement set forth in the following items in order to prevent an explosion or fire:
- (i) when using a drying equipment for dangerous goods, to clean or ventilate the inside of the equipment in advance;
 - (ii) when using a drying equipment for dangerous goods, to discharge gas, vapor or dust generated by drying operations, which have a risk of explosion or fire to a safe place;
 - (iii) to hold in place the materials to be heat-dried using the drying equipment for dangerous goods in order to prevent the materials from easily falling down;

- (iv) when using the drying equipment set forth in Article 294 item (vi), to ignite the equipment after ventilating the combustion chamber or other places to be ignited in advance;
- (v) to store flammable substances that have been heat-dried at a high temperature after the temperature of the substances has been lowered to a level that has no risk of being ignited; and
- (vi) to not place flammable substances at places near the drying equipment (excluding those whose outer surfaces do not rise to a considerably high temperature).

(Appointment of an Operations Chief of Drying Equipment)

Article 297 As regards the work set forth in Article 6, item (viii) of the Order, the employer must appoint operations chief of drying equipment from the persons who have completed the skill training course for operations chief of drying equipment.

(Duties of the Operations Chief of Drying Equipment)

Article 298 The employer must have operations chief of drying equipment carry out the following matters:

- (i) when using a drying equipment for the first time, or when having changed the drying method or the type of materials to be dried, to make the work method known to the workers in advance, and directly supervise the work;
- (ii) to immediately take necessary measures when having found any defective parts in the drying equipment and its attached equipment;
- (iii) to inspect as needed the temperature, condition of ventilation and condition of materials to be dried inside the drying equipment, and immediately take necessary measures when having found an abnormality; and
- (iv) to keep the place where a drying equipment is installed clean and organized at all times and not to place flammable substances in the place without reason.

(Periodical Self-inspection)

Article 299 (1) As regards a drying equipment and its attached equipment, the employer must carry out a self-inspection for the following matters periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of a drying equipment and its attached equipment which is not used for a period exceeding one year:

- (i) damage, deformation and corrosion both inside and outside of the equipment and shelves, frames, etc., inside;
- (ii) for the drying equipment for dangerous goods, abnormalities in the

- equipment for discharging gas, vapor or dust generated from the drying operation that has the risk of explosion or fire;
- (iii) for the drying equipment set forth in Article 294, item (vi), abnormalities in the equipment for ventilation of the combustion chamber or other places where materials are ignited;
 - (iv) abnormalities in openings such as peep windows, manholes, and exhaust holes;
 - (v) abnormalities in devices for measuring and adjusting the inside temperature; and
 - (vi) abnormalities in electric machine and appliance or wiring installed inside the equipment.
- (2) As regards the drying equipment and its attached equipment set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters listed in each item of the same paragraph before resuming the use.
- (3) When having carried out the self-inspection set forth in the preceding two paragraphs, the employer must record the following matters and preserve the record for three years:
- (i) the date of the inspection;
 - (ii) the method of the inspection;
 - (iii) the parts inspected;
 - (iv) the results of the inspection;
 - (v) the name of the person who has carried out the inspection; and
 - (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Repairs)

Article 300 When having found an abnormality in the drying equipment and its attached equipment as a result of the self-inspection set forth in paragraph (1) or (2) of the preceding Article, the employer must not use the equipment unless repairs have been made or other necessary measures have been taken.

**Section 6 Acetylene Welding Equipment and Gas Welding Equipment
Using Manifolds
Subsection 1 Acetylene Welding Equipment**

(Pressure Limit)

Article 301 When carrying out the work of welding, fusing or heating metals using acetylene welding equipment (meaning the equipment listed in Article 1, item (i) of the Order; the same applies hereinafter), the employer must not generate or use acetylene having a pressure exceeding a gauge pressure of 130

kPa.

(Generator Room)

- Article 302 (1) As regards an acetylene generator of acetylene welding equipment (hereinafter referred to as "generator"), the employer must install the generator in a dedicated generator room (hereinafter referred to as "generator room").
- (2) As regards a generator room, the employer must install it in the floor that has no floor right above and at a place where there is a considerable distance from the equipment using fire.
- (3) When installing a generator room outdoors, the employer must have its opening at a distance of 1.5 m or more from other buildings.

Article 303 As regards a generator room, the employer must conform to the requirements set forth in the following items:

- (i) to be constructed with an incombustible wall, and to have the following structure or a structure with the strength equivalent to or stronger than those listed in the following sub-items:
- (a) to be made of ferroconcrete with the thickness of 4 cm or more; and
- (b) to be made of steel or lumber on which metal lath is lined and mortar is painted 3 cm or more in thickness, or of steel on which an iron plate with thickness of 1.5 mm or more are lined;
- (ii) to use thin iron plate or lightweight incombustible materials for the roof and ceiling;
- (iii) to project an exhaust pipe having a cross-section area of one-sixteenth of the floor area or more from the roof, and place the opening of the pipe at a distance of 1.5 m or more from a window, an entrance and other openings;
- (iv) to use an iron plate with the thickness of 1.5 mm or more, or with a structure having the same strength as the iron plate or stronger using incombustible materials for the door of an entrance;
- (v) to keep the space between a wall and a generator that does not hinder the work of adjusting the generator, or the work of feeding of carbide, etc.

(Storeroom)

- Article 304 (1) As regards movable acetylene welding equipment, notwithstanding the provisions of Article 302, item (i), the employer must store the equipment in a dedicated storeroom when it is not used; provided, however, that this does not apply when storing the equipment after its gas bell is removed and the generator is washed.
- (2) As regards the storeroom referred to in the preceding paragraph, the employer must construct it by using fire-proof materials such as iron plate-

lined lumber and slate-lined lumber.

(Standards of Acetylene Welding Equipment)

Article 305 (1) As regards acetylene welding equipment (excluding generators and safety equipment) that generate or use acetylene of a gauge pressure (hereinafter referred to as "pressure" in this Article) of 7 kPa or more, the employer must conform to the requirements set forth in the following items:

(i) the gas holder conforms to the following requirements:

(a) to construct the main part of the gas holder with steel plates or steel pipes having a thickness equivalent or thicker than that listed in the right column of the following

Table in accordance with the inner diameter listed in the left column of the same Table;

Inner Diameter (Unit: cm)	Thickness of Steel Plate or Pipe (Unit: mm)
Less than 60	2
60 or more and less than 120	2.5
120 or more and less than 200	3.5
200 or more	5

(b) the method of joining steel plates or steel pipes of the main parts to be welding, or using rivet joints or bolt joints; and

(c) to be equipped with a gas escape valve or a cock to discharge a mixed gas of acetylene and air;

(ii) for the gas holder for acetylene that is compressed by a compressor after being fed from the generator, in addition to compliance with the requirements set forth in the preceding item, to be equipped with a safety valve and a pressure gauge as prescribed in the following sub-items:

(a) safety valve

i. those that operate before the pressure in the gas holder reaches 140 kPa, and shut while the pressure lowers to a level lower than the normal pressure by 10 kPa;

ii. when the generator generates a maximum quantity of acetylene, those that have the capability of keeping the pressure in the gas holder at less than 150 kPa;

(b) pressure gauge

i. the diameter of the dial plate is to be 75 mm or more for those mounted on a stationary gas holder, and 50 mm or more for those mounted on a movable gas holder;

ii. the maximum scale for the dial plate to indicate pressures which are 1.5 times the normal pressure or more and 500 kPa or less;

iii.) for the dial plate, to have indication of the normal pressure at a readily visible location;

(iii) for the parts of the gas holder, purifiers, acetylene distributing lines, etc., which contact acetylene, copper or an alloy containing 70% or more copper are not used.

(2) The employer must not use copper for the parts of the purifiers, acetylene distributing lines etc., of acetylene welding equipment other than those set forth in the preceding paragraph that is likely to come in contact with acetylene.

(Installation of Safety Equipment)

Article 306 (1) As regards acetylene welding equipment, the employer must provide safety equipment for each blowpipe; provided, however, that this does not apply when safety equipment is provided to the main pipe and for each branch pipe nearest to the blowpipes.

(2) As regards acetylene welding equipment in which the gas holder and the generator are separated, the employer must provide safety equipment between the generator and the gas holder.

(Sludge Pit of Carbide)

Article 307 The employer must install a sludge pit at a safe place and its structure must conform to the requirements set forth in the following items; provided, however, that this does not apply to mobile acetylene welding equipment used for outwork:

(i) bricks or concrete is to be used; and

(ii) the capacity of the sludge pit is to be three times or more of the carbide charging device.

Subsection 2 Gas Welding Equipment Using Manifolds

(Installation of Gas Manifolds)

Article 308 (1) As regards a gas manifold set forth in Article 1, item (ii) of the Order (hereinafter referred to as "gas manifolds"), the employer must install them in a place at a distance of 5 m or more from equipment using fire.

(2) As regards a gas manifolds other than those movable, the employer must install them in a dedicated room (hereinafter referred to as "gas manifold room").

(3) As regards the space between the wall of the gas manifold room and a gas manifold, the employer must keep sufficient space for handling of the device, exchanging of a gas cylinder, etc.

(Structure of the Gas Manifold Room)

Article 309 As regards a gas manifold room, the employer must conform to the

following requirements:

- (i) the gas does not stagnate when there is leakage of gas;
- (ii) to be constructed with a roof and a ceiling made of lightweight and incombustible materials; and
- (iii) to be constructed with a wall made of incombustible materials.

(Piping of Gas Welding Equipment using Manifolds)

Article 310 As regards the piping of the gas welding equipment using manifolds listed in Article 1, item (ii) of the Order (hereinafter referred to as "the gas welding equipment using manifolds"), the employer must conform to the requirements set forth in the following items:

- (i) for the joining part of a flange, a valve, a cock, etc., to take measures of having their joining surface securely joined using gaskets, etc.; and
- (ii) to install a safety equipment for the main pipe and branch pipes. In this case, to install two or more safety equipment for each blowpipe.

(Restriction on the Use of Copper)

Article 311 The employer must not use copper or an alloy containing 70% or more copper for the piping of the gas welding equipment using manifolds for dissolved acetylene and its accessories.

Subsection 3 Management

(Management of Acetylene Welding Equipment)

Article 312 When carrying out the work of welding, fusing or heating metals using acetylene welding equipment, the employer must comply with the requirements set forth in the following items:

- (i) to display the type, model, manufacturer's name, calculated quantity of hourly average gas generation, and the quantity of carbide fed in one lot of generators (excluding the gas generators of portable acetylene welding equipment) at a readily visible location in the generator room;
- (ii) to prohibit persons other than those in charge from entering the generator room without reason and display a notice to that effect in an appropriate manner;
- (iii) to prohibit smoking, use of fire or acts that are likely to produce sparks at places within 5 m from the generators or within 3 m from the generator room, and display a notice to that effect in an appropriate manner;
- (iv) to take measures to prevent confusion between supply lines for oxygen from those for acetylene;
- (v) to provide appropriate fire extinguishing equipment at places where acetylene welding equipment is installed;

- (vi) to not install the generators for portable acetylene welding equipment at places where the temperature is high, ventilation or airing is insufficient, or where there is much vibration, etc.; and
- (vii) to have the person engaging in the work wear eye protector and protective gloves.

(Management of the Gas Welding Equipment using Manifolds)

Article 313 When carrying out the work of welding, fusing or heating metal using the gas welding equipment using manifolds, the employer must comply with the requirements set forth in the following items:

- (i) to display the name of the gas used and the maximum quantity of gas stored at a readily visible location in the gas manifold room;
- (ii) to have the operations chief of gas welding attend when exchanging a gas cylinder;
- (iii) to prohibit persons other than those in charge from entering the gas manifold rooms without reason, and to display a notice to that effect at a readily visible location;
- (iv) to prohibit smoking, uses of fire or acts that may produce sparks at places within 5 m from the gas manifolds, and display a notice to that effect at a readily visible location;
- (v) to display the guidelines of operation and of inspection of a valve, a cock, etc., at a readily visible location in the gas manifold room;
- (vi) to take measures to prevent confusion between supply lines for oxygen from those for gas;
- (vii) to install appropriate fire extinguishing equipment at the places where a gas manifold is installed; and
- (viii) to have the person engaging in the work wear eye protector and protective gloves.

(Appointment of Operations Chief of Gas Welding)

Article 314 As regards the work set forth in Article 6, item (ii) of the Order, the employer must appoint operations chief of gas welding from persons who have the license of operations chief of gas welding.

(Duties of an Operation Chief of Gas Welding)

Article 315 When carrying out work of welding, fusing or heating metal using an acetylene welding equipment, the employer must have the operations chief of gas welding carry out the following matters:

- (i) to decide the work method, and supervise the work;
- (ii) to have the worker engaging in handling acetylene welding equipment carry out the following matters:

- (a) to not use a tool which is likely to produce sparks for, or give shocks to, the generator being used;
- (b) when inspecting gas leakage from acetylene welding equipment, to use a safe method such as using soap water;
- (c) to not put things on the gas bell of the generator without reason;
- (d) to not leave the door of the entrance to the generator room open;
- (e) when recharging carbide to the generator of portable acetylene welding equipment, to carry out the operations at a safe place outdoors; and
- (f) when opening a carbide can, to not perform acts that are likely to produce sparks, such as giving shocks;
- (iii) when starting the work, to inspect the acetylene welding equipment, and when a mixed gas of air and acetylene exists in the generator, to remove the mixed gas;
- (iv) to place the safety equipment at a place where its water-level can easily be inspected during operations, and inspect the safety device more than once a day;
- (v) when keeping the acetylene welding equipment warm or heating the equipment to prevent water in the equipment from freezing, to use a safe method, such as using warm water or steam;
- (vi) when suspending the use of the generator, to keep the water level in its water chamber in a condition that the water and residual carbide may not come into contact each other;
- (vii) when repairing, processing, transporting or storing the generator, or suspending its use continuously, to completely remove the acetylene and carbide from the generator;
- (viii) to dispose carbide sludge in a safe manner such as keeping it in a sludge pit until the danger due to gas is removed;
- (ix) to monitor the use of eye protector and protective gloves by workers engaged in the work; and
- (x) to carry the license of operations chief of gas welding.

Article 316 When carrying out the work of welding, fusing or heating metal using the gas welding equipment using manifolds, the employer must have the operations chief of gas welding carry out the following matters:

- (i) to decide the work method and supervise the work;
- (ii) to have the worker engaging in the handling of the gas manifolds carry out the following matters:
 - (a) to remove oil, etc., and dust, etc., adhering to the mouthpiece of the gas cylinder and the mounting opening of the piping;
 - (b) when having exchanged gas cylinders, to inspect the mouthpiece of the gas cylinder and the mounting opening of the piping for leakage of gas, and

- remove the mixed gas of the gas and air in the piping;
- (c) when inspecting leakage of gas, to use a safe method such as using soap water;
- (d) to open and close the valve or cock gently;
- (iii) to be present when the gas cylinders are exchanged;
- (iv) when commencing the work, to inspect the hose, blowpipe, hose band, etc., and when having found that there is a risk of leakage of gas or oxygen due to the damage, wear, etc., to repair or exchange the parts damaged, worn, etc.;
- (v) to place the safety equipment at a place where its functions can easily be confirmed, and inspect the safety device more than once a day;
- (vi) to monitor the use of eye protector and protective gloves by workers engaged in the work; and
- (vii) to carry the license of operations chief of gas welding.

(Periodical Self-inspection)

- Article 317 (1) As regards an acetylene welding equipment or a gas welding equipment using manifolds (excluding the parts of the piping of those devices installed underground; hereinafter the same applies in this Article), the employer must carry out a self-inspection on the existence of damage, deformation, corrosion, etc., and the functions of the equipment periodically once every period not exceeding one year; provided, however, that this does not apply to the non-use period of acetylene welding equipment or a gas welding equipment using manifolds, which is not used for a period exceeding one year.
- (2) As regards the acetylene welding equipment or gas welding equipment using manifolds referred to in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the matters prescribed in the same paragraph before resuming the operation.
- (3) When an abnormality is found in the acetylene welding equipment as a result of the self-inspection referred to in the preceding two paragraphs, the employer must not use the equipment unless repairs are made or other necessary measures have been taken.
- (4) When having carried out the self-inspection set forth in paragraph (1) and (2), the employer must record the following matters and preserve the record for three years:
- (i) the date of the inspection;
 - (ii) the method of the inspection;
 - (iii) the parts inspected;
 - (iv) the results of the inspection;
 - (v) the name of the person who has carried out the inspection; and
 - (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

Section 7 Blasting Work

(Standards of Blasting Work)

Article 318 (1) The employer must have the worker engaging in the work set forth in Article 20, item (i) of the Order (hereinafter referred to as "blasting work") carry out the following matters:

- (i) to not defreeze the frozen dynamite by a dangerous method, such as bringing it in proximity to fire or into direct contact with a steam pipe or other high-temperature objects;
 - (ii) when charging gunpowder or explosives, to not use naked fire or smoke in the vicinity;
 - (iii) to use a safe charging tool, which are unlikely to cause an explosion due to friction, shock, static electricity, etc.;
 - (iv) to use a safe stemming, which are unlikely to cause an ignition or an inflammation, such as clay or sand;
 - (v) when the charged gunpowder does not explode after ignition, or when it is difficult to confirm that the charged gunpowder has exploded, to comply with the requirements set forth in the following sub-items:
 - (a) when an electric detonator is used, to remove the blasting leading wire from the igniter and short-circuit the end of the wire, and take measures to prevent re-ignition; and not to approach the place where the gunpowder is charged within five minutes after the measures are taken; and
 - (b) when device other than an electric detonator is used, not to approach the place where the gunpowder is charged within 15 minutes after ignition.
- (2) The worker engaging in the work set forth in the preceding paragraph must carry out the matters listed in each item of the same paragraph.

(Supervisor for Fuse Blasting Work)

Article 319 (1) When carrying out fuse blasting work, the employer must appoint a supervisor from those eligible for the work, and have the supervisor carry out the following matters:

- (i) to instruct workers other than those engaging in igniting work to evacuate the workplace before ignition;
- (ii) to indicate the place for evacuation and the route to that place to workers engaging in the igniting work;
- (iii) when a worker takes charge of five or more ignitions at a time, have each worker use device that notifies the time of evacuation such as a blasting watch or waste fuses;
- (iv) to instruct workers on the procedures and specification of the igniting work;

- (v) to give a signal of ignition;
 - (vi) to give a signal of evacuation to workers who engaged in the igniting work;
and
 - (vii) to check for misfires or residual gunpowder.
- (2) The supervisor for fuse blasting work must carry out the matters listed in each item of the preceding paragraph.
- (3) The worker who engages in the fuse blasting work must follow the instructions and signals given by the supervisor pursuant to the provisions of the preceding paragraph.

(Supervisor for Electric Blasting Work)

- Article 320 (1) When carrying out electric blasting work, the employer must appoint a supervisor from those eligible for the work and have the supervisor carry out the matters set forth in paragraph (1), items (v) and (vii) of the preceding Article and the following matters:
- (i) to indicate the place for evacuation and the route to that place to the workers engaging in the work;
 - (ii) to confirm that workers have been evacuated from the dangerous area before ignition;
 - (iii) to appoint a person in charge of the ignition; and
 - (iv) to give instruction on the place of ignition.
- (2) The supervisor of the electric blasting work must carry out the matters listed in each item of the preceding paragraph.
- (3) The worker engaging in the electric blasting work must follow the instructions and signals given by the supervisor pursuant to the provisions of the preceding paragraph.

(Evacuation)

Article 321 When carrying out blasting work, and it is not possible for workers to evacuate to a safe distance from the workplace, the employer must provide an evacuation shelter with a solidly protected front and top part.

Section 7-2 Concrete Breaking Work

(Standards for Concrete Breaking Work)

- Article 321-2 When carrying out the breaking work using a concrete breaker, the employer must comply with the requirements set forth in the following items:
- (i) when charging a concrete breaker, to prohibit the use of naked fire or smoking in the vicinity;
 - (ii) to use a safe charging tool, which is unlikely to cause ignition of the concrete breaker due to friction, shock, static electricity, etc.

- (iii) to use a safe stemming, which is unlikely to cause ignition or inflammation, such as cement mortar or sand;
- (iv) to take measures to prevent the broke materials, etc., from scattering; and
- (v) when the charged concrete breaker does not ignite after ignition, or when it is difficult to confirm that the charged concrete breaker has ignited, to remove the lead wire of the blaster from the igniter and short-circuit the end of the wire, and to take measures to prevent re-ignition; and not to allow the worker engaging in the concrete breaking work to approach the place where the concrete breaker is charged within five minutes after the measures have been taken.

(Appointment of an Operations Chief of Concrete Breaking)

Article 321-3 As regards the work set forth in Article 6, item (viii)-2 of the Order, appoint an operations chief of concrete breaking from the persons who have completed the skill training course for operations chief of concrete breaking.

(Duties of the Operations Chief of Concrete Breaking)

Article 321-4 The employer must have the operations chief of concrete breaking carry out the following matters:

- (i) to decide the work method and directly supervise the work;
- (ii) to indicate the place for evacuation and the route to that place to the workers engaging in the work;
- (iii) to confirm that workers have been evacuated from the dangerous area before ignition;
- (iv) to appoint a worker in charge of ignition;
- (v) to give a signal of ignition; and
- (vi) to check for misfires or residual gunpowder.

Section 8 Miscellaneous Provisions

(Underground Workshop)

Article 322 When carrying out the work at underground workshop where flammable gas is likely to be generated (excluding the case of carrying out construction works of tunnels etc., prescribed in Article 382), or when carrying out an open-cut excavation work at places where discharged gas from gas supply lines is likely to be discharged (meaning the excavation work of natural ground or transportation, etc., of earth and rocks associated with the excavation (limited to the work which is carried out at places where excavating work of natural ground are carried out and in the vicinity of the places); the same applies hereinafter), the employer must take the following measures in order to prevent explosion or fire:

- (i) to appoint a person in charge of measuring the concentration of the gas, and have the person measure the concentration of the gas every day before commencing the work and when having found an abnormality related to the gas at places where gas is likely to be generated or become stagnant;
- (ii) when having found that the concentration of the gas has reached 30% or more of the value of the explosion lower limit, the employer must have workers immediately evacuate to a safe place, suspend the use of fire or other things that are likely to become an ignition source, and conduct airing, ventilation, etc.

Articles 323 and 324 Deleted

(Place Where Strong Light Is Emitted)

- Article 325 (1) The employer must enclose places where it is likely to cause dangers due to strong light such as welding ark is emitted; provided, however, that this does not apply when it is inevitable due to the nature of the operation.
- (2) As regards places set forth in the preceding paragraph, the employer must provide appropriate personal protective equipment.

(Pressurized Feeding Facilities of Corrosive Liquid)

Article 326 When carrying out the work of pressure feeding with power and through hoses these liquids which causes dangers of corrosive effect on the skin, such as sulfuric acid, nitric acid, hydrochloric acid, acetic acid, chlorosulfonic acid, caustic soda solution and cresol (hereinafter referred to as "corrosive liquids"), the employer must take the following measures for the equipment used in the work:

- (i) to provide a pressure gauge at a readily visible location for the person who operates the equipment used for pressure feeding (hereinafter referred to as the "operator" in this Article), and a device for cutting off power at a place where the operator can easily operate it, respectively;
- (ii) to use the hoses and their connecting tools that are anti-corrosive, heat-resistant and cold-resistant against the corrosive liquids fed;
- (iii) for hoses, to set the pressure for their safe use by conducting hydraulic tests, etc., and indicate the set pressure on hoses, and not to carry out the feed using a pressure exceeding the pressure;
- (iv) when there is a risk of abnormal pressure acting on the inside of hoses, to provide the equipment used for pressure feeding with preventive device for excessive pressurizing such as unloaders and return valves;
- (v) to securely connect the connecting parts of hoses and pipes other than hoses, and between hoses using connecting tools;
- (vi) when carrying out pressure feeding at a gauge pressure exceeding 200 kPa,

as regards the connecting tool set forth in the preceding item, to use those whose structure is unlikely to be disconnected due to the pressure such as the screw connection method, three-hook connection method, etc., those having three or more bottoms at the part to mount hoses, etc.;

- (vii) to appoint an operator and have the operator monitor the operation of the equipment used for pressure feeding and the pressure gauge; and
- (viii) to inspect the hoses and their connecting tools before commencing the use for the day, and to exchange them when there is a risk of scattering or leakage of corrosive liquids due to defects such as damage, corrosion, etc.

(Personal Protective Equipment)

Article 327 (1) The employer must have the worker engaging in pressure feeding work of corrosive liquids wear personal protective equipment necessary to prevent the body from the danger of corrosion due to scattered, leaked or overflowing corrosive liquid.

- (2) The worker engaging in the work set forth in the preceding paragraph, when having been instructed to wear the personal protective equipment set forth in the same paragraph, must wear the equipment.

(Restriction on the Use of Gas Other Than Air)

Article 328 When carrying out the pressure feeding work of corrosive liquid using the pressure of compressed gas as power source, the employer must not use gas other than air for the compressed gas; provided, however, that in having completed the work, and immediately removing the gas, or when taking measures which are unlikely to cause danger of suffocation due to workers entering the facilities used for the pressure feeding, such as indicating that the gas exists, nitrogen or carbon dioxide gas may be used.

(Work Standards for Filling Tires with Air)

Article 328-2 (1) When assembling a tire for an automobile (excluding two-wheeled vehicles) (hereinafter referred to as "tires" in this Article) and filling a tire with air using an air compressor, the employer must have the worker engaging in the work adjust air pressure appropriately in accordance with the type of tire in order to prevent danger due to a burst tire, etc., and use appliances such as safety enclosures etc., in order to prevent pieces of burst tires, etc., from coming flying.

- (2) The worker engaging in the work set forth the preceding paragraph must adjust air pressure appropriately corresponding to the type of tire and use the appliances set forth in the same paragraph.

(Ship Modifications)

Article 328-3 In carrying out ship modifications, repairs and cleaning, etc., when carrying out the work using machine, etc., that generates sparks or arcs or reaches high temperatures, that has a risk of becoming a source of ignition, or work using fire in areas inside the ship such as the hold or adjoining areas, the employers must measure the concentration of vapor of inflammable substances and flammable gas in the workplace and surrounding areas before commencing the work and as needed during work.

(Modification of Manufacturing Facilities of Liquid Oxygen)

Article 328-4 In carrying out modification, repairing and cleaning, etc., of the manufacturing facilities of liquid oxygen, when carrying out the work inside the facilities, the employer must comply with the following requirements:

- (i) to decide the method and procedures of the work, and make them known to the workers concerned in advance;
- (ii) to designate a supervisor for the work and have the supervisor direct the work;
- (iii) to doubly close valves or cocks or apply baffles in addition to closing valves or cocks in order to prevent the workplace from leakage of oxygen; and
- (iv) to lock the valves, cocks and baffles set forth in the preceding item, display a notice stating that they must not be opened, or place a watcher.

(Manufacturing of Hydroxylamine)

Article 328-5 When manufacturing or handling hydroxylamine and its salt (hereinafter referred to as "hydroxylamine etc." in this Article), the employer must comply with the requirements of the following items in order to prevent explosion:

- (i) to take measures to prevent the abnormal reaction between hydroxylamine, etc., and ferrous ion, etc., such as prevention of interfusion of ferrous ion etc., to hydroxylamine etc.; and
- (ii) when carrying out the work of heating hydroxylamine, etc., to adjust the temperature.

Chapter V Prevention of Dangers Due to Electricity

Section 1 Electric Machine and Appliance

(Enclosure for Electric Machines and Appliances)

Article 329 As regards energized parts of electric machine and appliance (excluding the energized parts of electric machine and appliance which are inevitable to be exposed for the purpose of their use such as heating unit of electric heaters, the welding rods of resistance welding machines) which is liable to cause danger of electric shocks to workers when they come into contact

(including contact via an electric conductor; hereinafter the same applies in this Chapter) or come in proximity to these parts during work or when passing through, the employer must install enclosures or insulating covers in order to prevent electric shocks; provided, however, that this does not apply to the electric machine and appliance which is installed in an enclosed place such as a switchboard room and substation room where the employer prohibited persons other than those who are engaged in the work set forth in Article 36, item (iv) (hereinafter referred to as "electrician") from entering, or installed on detached place such as a pole and a tower where there is no possibility that persons other than electrician will come in proximity to them.

(Guard for a Portable Lamp)

Article 330 (1) The employer must install a guard for portable lamps to be connected with movable electric wire, suspended lamps, etc., to be connected with temporary wiring or movable electric wire, in order to prevent the danger of electric shocks by coming into contact with the bayonet cap, and the danger due to broken electric bulbs.

(2) As regards the guard set forth in the preceding paragraph, the employer must use guards that comply with the following requirements:

- (i) having the structure that prevents hands from easily coming into contact with the exposed part of the bayonet cap of the electric bulbs; and
- (ii) being made of materials which are not easily broken or deformed.

(Holder for Welding Rods)

Article 331 As regards holders for welding rods used in work such as arc welding, etc. (excluding automatic welding), the employer must not use them unless they conform to the standards set by the Japanese Industrial Standard C 9302 (Welding electrode holders), or those which have same insulating effect or heat resistance equal to or better than the standard.

(Automatic Voltage Reducing Device for Alternative Current Arc Welding Machines)

Article 332 When carrying out alternative current arc welding, etc. (excluding automatic welding) at places surrounded by electric conductors which are very confined, such as inside of a double-bottom or peak tank of a vessel, of a drum or dome of a boiler, or at the place with the height of 2 m or higher where there is a risk of endangering workers due to falling and there is a risk of workers coming into contact with grounding materials with high conductivity of steel frame, etc., the employer must use an automatic voltage reducing device for alternative current arc welding machines.

(Prevention of Electric Shocks Due to Current Leakage)

Article 333 (1) As regards machines or appliance equipped with motor (hereinafter referred to as "motor-driven appliance") which are of the movable or portable type, those that have voltage to ground exceeding 150 V, or those used at places where they are wetted with liquids having high electric conductivity such as water, or at places where electric conductivity is high, such as on an iron plate, a steel frame, or a surface plate, the employer must connect an earth-leakage circuit breaker for preventing electric shocks that conform to the rating of the circuit, and having good sensitivity and the function to reliably work in order to prevent danger of electric shocks due to the current leakage to the electric circuit to which motor-driven appliances are connected.

(2) When it is difficult to take the measures prescribed in the preceding paragraph, the employer must use the machine and appliance by grounding the metal portions of the outer frame of motor-driven appliance, metal covers of motors, prescribed in the following manner:

- (i) to connect the metal parts to a grounding pole by any of the following methods:
 - (a) the method of connecting to a grounding pole by using a movable cable with a core exclusively used for a grounding line and a connecting device with a terminal exclusively used for a grounding terminal;
 - (b) the method of connecting a grounding line attached to a movable electric cable and the grounding terminal installed at the location adjacent to the power source consent of a motor-driven apparatus;
- (ii) when the method set forth in (a) of the preceding item is used, to take measures to prevent confusing the grounding conductor with an electric conductor connected to the electrical circuit, and the grounding terminal with a terminal connected to the electrical circuit;
- (iii) to securely connect the grounding pole with the ground by a method such as burying it in the ground to a sufficient depth.

(Exclusion from Application)

Article 334 The provisions of the preceding Article do not apply to motor-driven appliance that fall under any of the following items:

- (i) motor-driven appliance used by connecting with an electrical circuit of a non-grounding system (limited to those for which the secondary voltage of the insulated transformer provided in the circuit on the power source side of the motor-driven appliance is 300 V or less, and which the electrical circuit on the load side of the insulated transformer is not grounded);
- (ii) motor-driven appliance used on an insulating platform; or
- (iii) specified electric appliances set forth in Article 2, paragraph (2) of the

Electric Appliances Materials Safety Act (Act No. 234 of 1961) and is a motor-driven appliance of a double insulation structure on which the indication under Article 10 of the same Act is attached.

(Illuminance on the Operation Part of Electric Machines and Appliances)

Article 335 In order to prevent dangers of electric shocks or dangers due to an operational error in operating an electric machine or appliance, the employer must maintain necessary illumination on the operation part of the electric machine or appliance.

Section 2 Wiring and Movable Electric Cables

(Insulating Coating of Wiring)

Article 336 As regards wiring which workers come into contact or have a risk of coming into contact during work or when passing through and which have insulating coating (excluding those which only electricians come into contact or have a risk of contacting in work set forth in Article 36, item (iv)), or movable electric cables, the employer must take measures for preventing the danger of electric shocks due to damage or aging of the insulating coating.

(Covering or Sheathing of Movable Electric Cables)

Article 337 As regards movable electric cables or their attached connecting tools used at places where they are wet with water or other liquids having high conductivity and which workers may contact during work or when passing through, the employer must not use them unless the covering or sheathing of the movable electric cables or their connecting tools have an insulating effect against the liquids having high conductivity.

(Temporary Wiring)

Article 338 The employer must not use temporary wiring or movable electric cables on the surface of passages; provided, however, this does not apply when using the wiring or movable electric cables in a condition where there is no risk that the insulating coating of the wiring or movable electric cables may be damaged due to a vehicle and other things passing over the wiring or movable electric wires.

Section 3 Power Cut Operation

(Measures for Carrying Out Power Cut Work)

Article 339 (1) When carrying out electric work such as installation, inspection, repairing or painting of an electrical circuit or its support while opening the

electrical circuit, the employer must take the following measures for the electrical circuit after opening the electrical circuit. This also applies to the case of carrying out an electric work such as installation, inspection, repairing or painting of an electrical circuit or its support in proximity to the electrical circuit or work such as the construction, dismantling, inspection, repairing or painting of a structure in proximity to the electrical circuit (excluding the support of an electrical circuit; hereinafter the same applies in this Chapter):

- (i) to lock the switch used for circuit opening during work, or indicate necessary matters on prohibition of electric charge, or place a watcher;
 - (ii) as regards the opened circuit that are equipped with a power cable, power capacitor, etc., and have a risk of danger due to residual electric charge, to completely discharge the residual charge by a safe method; and
 - (iii) as regards the opened circuit that is of high voltage or extra-high voltage, to confirm the power cut with voltage detector, and short circuit to ground securely with a short circuit grounding equipment to prevent the danger of electric shocks due to erroneous turning on the electricity, confusion with other circuits, or induction from other circuits.
- (2) When seeking to turn on the electricity on the opened circuit during work set forth in the preceding paragraph or when the work is finished, the employer must not turn on the electricity unless having confirmed that it is not likely to cause danger of electric shocks to the worker engaging in the work and that the short circuit grounding equipment has been removed in advance.

(Opening the Circuit of Disconnectors)

Article 340 When opening a switch such as a disconnecter and line switch for high voltage or extra-high voltage electrical circuit that is not for breaking the load current, the employer must have the workers engaged in the operation confirm that the electric circuit is at no load using a pilot lamp for indicating that the electric circuit is at no load, a tablet for identifying the electrical circuit, etc.; provided, however, that this does not apply when a locking device is provided for the switch that does not allow the circuit to open unless the electrical circuit is at not load.

Section 4 Live-Line Work and Work in Proximity to Live Line

(High Voltage Live Line Work)

Article 341 (1) In carrying out the work of handling high-voltage charged circuit, such as inspections and repairs of the circuit, and when when there is a risk of causing danger of electric shock on the worker engaging in the work, the employer must take measures that fall under any of the following items:

- (i) to have the worker wear personal insulating protective equipment, and

install an insulating device to the parts of the charged electrical circuit other than the part actually handled by the worker that has a risk of causing danger of electric shock when the worker comes into contact or comes in proximity to the parts;

(ii) to have the worker use live line work instruments; or

(iii) to have the worker use live line work equipment. In this case, the risk of electric shocks due to the body of the worker or an electric conductor handled by the worker such as a metal tool or material (hereinafter referred to as "body, etc.") coming into contact or coming in proximity to objects with different voltage from that of the charged circuit actually handled by the worker must be eliminated.

(2) A worker, when having been instructed to wear personal insulating protective equipment, install an insulating device, and use live line work instruments or live line work equipment by the employer in carrying out the work set forth in the preceding paragraph, must wear, install, or use them, respectively.

(Work in Proximity to High-Voltage Live Lines)

Article 342 (1) When carrying out the electric work of installing, inspecting, repairing, painting, etc., an electrical circuit or its supports, and when there is a risk of electric shock to the worker engaging in the work due to contacting a high-voltage charged circuit, or approaching the electrical circuit within 30 cm above the head or within 60 cm from the side of the body or below the feet, the employer must install an insulating device for the charged circuit; provided, however, that this does not apply when having the worker engaging in the work wear personal insulating protective equipment, and when there is no risk of electric shock to the parts of the body other than those wearing the personal insulating protective equipment due to coming into contact or coming in proximity to the charged electrical circuit.

(2) A worker, when having been instructed to install an insulating device or wear personal insulating protective equipment by the employer in carrying out the work set forth in the preceding paragraph, must install or wear them, respectively.

(Installing Insulating Devices)

Article 343 (1) When having workers carry out the work of installing or removing an insulating device in the case referred to in the preceding two Articles, the employer must have the worker engaging in the work wear personal insulating protective equipment or have them use live line work instruments or live line work equipment.

(2) A worker, when having been instructed to wear protective equipment or use live line work instruments or live line work equipment by the employer in

carrying out the work set forth in the preceding paragraph, must wear or use them, respectively.

(Extra High Voltage Live Line Work)

Article 344 (1) In carrying out electric work such as inspecting, repairing and cleaning extra high voltage charged circuits or their supporting insulators, and when there is a risk of electric shock to the worker engaging in the work, the employer must take measures that fall under any of the following items:

(i) to have the worker use live line work instruments. In this case, for the body, etc., the approach limit distance listed in the right column of the following Table must be maintained in accordance with the working voltage of charged circuit listed in the left column of the same Table; or

Working Voltage of Charged Electric Circuit (Unit: kV)	Minimum Allowable Proximity (Unit: cm)
22 or less	20
More than 22 and 33 or less	30
More than 33 and 66 or less	50
More than 66 and 77 or less	60
More than 77 and 110 or less	90
More than 110 and 154 or less	120
More than 154 and 187 or less	140
More 187 and 220 or less	160
More than 220	200

(ii) to have the worker use live line work equipments. In this case, the danger of electric shocks due to the body, etc., coming into contact or coming in proximity of an object having an electric potential different from the electric potential of the charged electric circuit or its supporting insulators handled by the worker must be eliminated.

(2) A worker, when having been instructed to use a live line work instrument or live line work equipment in carrying out the work set forth in the preceding paragraph, must use the instrument or equipment.

(Work in Proximity to Extra High Voltage Live Lines)

Article 345 (1) In carrying out electric work such as inspecting, repairing, painting and cleaning an electric circuit or its supports (excluding supporting insulators for extra high voltage charged circuits), and when there is a risk of causing danger of electric shock to the worker engaging in the work due to coming in vicinity of an extra high voltage charged circuit, the employer must take measures that fall under any of the following items:

(i) to have the worker use live line work equipment; or

(ii) to have body, etc., keep the approach limit distance to the charged circuit as prescribed in paragraph (1), item (i) of the preceding Article. In this case, to provide a sign, etc., at a readily visible location where the approach limit distance may be maintained, or to place a watcher and have the watcher watch the work.

(2) A worker, when having been instructed to use live line work equipment by the employer in carrying out the work set forth in the preceding paragraph, must use it.

(Low Voltage Live Line Work)

Article 346 (1) In carrying out the work of handling a low voltage charged circuit, such as inspecting or repairing the circuit, and when there is a risk of causing danger of electric shock to the worker engaging in the work, the employer must have the worker wear personal insulating protective equipment or use live line work instruments.

(2) A worker, when having been instructed to wear personal insulating protective equipment or use live line work instruments by the employer in carrying out the work set forth in the preceding paragraph, must wear or use them, respectively.

(Operations in Proximity to Low Voltage Live Lines)

Article 347 (1) In carrying out electric work such as installing, inspecting, repairing, or painting an electrical circuit or its supports at a place in vicinity of a low voltage charged electric circuit, and when there is a risk of causing danger of electric shock to the worker engaging in the work due to coming into contact with the charged circuit, the employer must install an insulating device for the charged electrical circuit; provided, however, that this does not apply when having the worker engaging in the work wear personal insulating protective equipment, and the parts of the body, etc., other than those wearing the personal insulating protective equipment are unlikely to come into contact with the charged electrical circuit.

(2) In the case referred to in the preceding paragraph, when having workers carry out work of installing or removing an insulating device, the employer must have the worker engaging in the work wear personal insulating protective equipment or use live line work instruments.

(3) A worker, when having been instructed to install an insulating device, wear personal insulating protective equipment, or use live line work instruments by the employer in carrying out the work set forth in the preceding two paragraphs, must install, wear, or use them, respectively.

(Personal Insulating Protective Equipment)

Article 348 (1) As regards personal insulating protective equipment, etc., listed in the following items, the employer must use the equipment whose type, materials and size are suitable for each purpose of use:

- (i) the personal insulating protective equipment set forth in Articles 341 through 343;
 - (ii) the insulating device set forth in Article 341 and Article 342;
 - (iii) the live line work equipment set forth in Article 341 and Articles 343 through 345;
 - (iv) the live line work instruments set forth in Article 341, Article 343, and Article 344; and
 - (v) the personal insulating protective equipment and the live line work instruments set forth in Article 346 and Article 347 and the insulating device set forth in Article 347.
- (2) As regards personal insulating protective equipment, live line work instruments and insulating device listed in item (v) of the preceding paragraph, which are used for a charged circuit of 750 V or less for direct current or of 300 V or less for alternative current, the employer must use those that have an insulating effect in accordance with the voltage of the charged circuit.

(Prevention of Electric Shocks in Carrying Out the Work for Construction of Structures)

Article 349 In carrying out the work such as constructing, dismantling, inspecting, repairing, and painting a structure or the work associated with them, or the work using a pile driver, pile drawer, mobile crane, etc., at a place in the vicinity of overhead wires or charged circuits of electric machine and appliance, when there is a risk of electric shocks to the worker engaging in the work due to the worker' body, etc., coming into contact or coming in the vicinity of the charged circuits during work or when passing through, the employer must take measures that fall under any of the following items:

- (i) to move the charged circuit to other places;
- (ii) to install an enclosure to prevent the danger of electric shock;
- (iii) to provide the charged circuit with insulating protective equipment; or
- (iv) when taking measures falling under the preceding three items are extremely difficult, to place a watcher and have the watcher monitor the work.

Section 5 Management

(Supervision in Carrying Out Electric Work)

Article 350 When carrying out the work set forth in Article 339, Article 341, paragraph (1), Article 342, paragraph (1), Article 344, paragraph (1), or Article

345, paragraph (1), the employer must make the period of carrying out the work, the content of the work, and the electric circuits handled, and the electric circuit system in vicinity of the electrical circuit known to the worker engaging in the work, as well as designate a supervisor of the work and have the supervisor carry out the following matters:

- (i) to make the method and procedures of the work known to the workers in advance, and directly supervise the work;
- (ii) when carrying out the work set forth in Article 345, paragraph (1) by taking the measures set forth in item (ii) of the same paragraph, to instruct the commencement of the work after having confirmed the installation of the sign, etc., or the placement of a watcher;
- (iii) when carrying out work after opening the electrical circuit, to instruct the commencement of the work after having confirmed the power cut state of the electrical circuit, the switch used for the circuit opening being locked, indication of matters necessary to prohibit electric charge, placement of a watcher, and the state of fitting of the appliance for short circuit to ground after opening the electric circuit.

(Periodical Self-inspection of Personal Insulating Protective Equipment)

Article 351 (1) As regards personal insulating protective equipment, etc., listed in each item of Article 348, paragraph (1) (for those listed in item (v) of the same paragraph, limited to those used for an charged circuit of low voltage exceeding 300 V in alternative current; hereinafter the same applies in this Article), the employer must carry out a self-inspection for the insulating performance, periodically once every period not exceeding six months; provided, however, that this does not apply to the non-use period of personal insulating protective equipment, etc., which is not used for a period exceeding six months.

- (2) As regards the personal insulating protective equipment, etc., set forth in the proviso of the preceding paragraph, the employer must carry out a self-inspection for the insulating performance before resuming the use.
- (3) When having found an abnormality in the personal insulating protective equipment, etc., as a result of the self-inspection set forth in paragraph (1) or (2), the employer must not use them unless having made repairs or taken other necessary measures.
- (4) When having carried out the self-inspection set forth in paragraph (1) or (2), the employer must record the following matters and preserve the record for three years:
 - (i) the date of the inspection;
 - (ii) the method of the inspection;
 - (iii) the parts inspected;
 - (iv) the results of the inspection;

- (v) the name of the person who has carried out the inspection; and
- (vi) when measures such as repairs have been taken based on the result of the inspection, the details of the repairs.

(Inspection Before Using Electric Machine and Appliance)

Article 352 When using the electric machine and appliance listed in the left column of the following Table, the employer must inspect the matters listed in the right column of the same Table in accordance with the type of the electric machine and appliance, and immediately repair or replace it when having found any abnormality.

Classification of Electrical Machinery and Equipment	Inspection Matters
A holder for welding rod, etc., set forth in Article 331	Damage on the insulated protected portion and connected portion of the cable for holders
Automatic voltage reducing device for alternating current arc welding machine set forth in Article 332	Operating state
Earth-leakage circuit breaker for preventing electric shock set forth in Article 333, paragraph (1)	
Motor-driven appliance set forth in Article 333 that are grounded by the method set forth in paragraph (2) of that Article	Abnormalities, such as disconnected ground wire or lifting of grounding pole
Movable electric cables and their connecting tools set forth in Article 337	Damage on the cover or armor
Voltage detector set forth in Article 339, paragraph (1), item (iii)	Voltage testing capability
Short circuit grounding equipment set forth in Article 339, paragraph (1), item (iii)	Damage on metal fittings and grounding lead wires
Insulating protective equipment set forth in Articles 341 through 343	Damage such as cracks, splits and breakages, and dryness state
Insulating device set forth in Articles 341 and 342	
Live line work equipment set forth in Articles 341 and Articles 343 through 345	
Live line work instruments set forth in Articles 341, 343 and 344	
Insulating protective equipment and live line work instruments set forth in Articles 346 and 347 and insulating device set forth in Article 347	

Insulating device set forth in Article 349, item (iii) and Article 570, paragraph (1), item (vi)
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(Inspection of Enclosure of Electric Machine and Appliance)

Article 353 The employer must check for damage of the enclosure and insulating cover set forth in Article 329 more than once a month, and immediately make repairs when having found any abnormality.

Section 6 Miscellaneous Provisions

(Exclusion from Application)

Article 354 The provisions of this Chapter do not apply to electric machines and appliances, wiring, or movable electric cables with voltage to ground of 50 V or less.

Chapter VI Prevention of Dangers in Excavating Work

Section 1 Open-Cut Excavating Work

Subsection 1 Time and Procedures of Excavating Work

(Investigation on the Workplace)

Article 355 In carrying out the excavating work of natural ground, when there is a risk of endangering workers due to collapse of natural ground, damage to underground-installed objects, etc., the employer must investigate in advance the workplace and natural ground surrounding the workplace regarding the following matters by boring or other appropriate methods, determine the time and procedures of excavation that conforms to what became known by the investigation, and carry out the work according to the procedures determined:

- (i) landform, nature of the soil and conditions of strata;
- (ii) existence and condition of cracks, water content, spring water and freezing;
- (iii) existence and condition of underground-installed objects, etc.; and
- (iv) existence and condition of high-temperature gas and vapor.

(Standard for Gradient of the Excavation Surface)

Article 356 (1) When carrying out excavating work of natural ground (excluding natural ground composed of rock beds without cracks that cause collapse or fall of rocks, natural ground composed of sand, and natural ground in a condition which is liable to collapse due to blasting etc.; hereinafter the same applies in this Article) by the method of manual excavation (meaning the method of excavation without using excavating machines such as a power shovel and tractor shovel; hereinafter the same applies in the following Article), the

employer must make the gradient of the excavation surface (in the case that there is a horizontal step with a depth of 2 m or more on the excavation surface, meaning each excavation surface divided by the horizontal step; the same applies hereinafter) the value equal to or less than that listed in the right column of the following Table in accordance with the type of the ground listed in the left column and the height of the excavation surface listed in the middle column of the same Table, respectively:

Type of the Natural Ground	Height of the Excavation Surface (Unit: m)	Gradient of the Excavation Surface (Unit: Degrees)
natural ground composed of rock beds or hard clay	Less than 5	90
	5 or more	75
other natural ground	Less than 2	90
	2 or more and less than 5	75
	5 or more	60

(2) In the case referred to in the preceding paragraph, when it is not possible to calculate the gradient because there are parts of the excavation surface that differ in slope from other parts, the slopes of the part of the excavation surface must be maintained so that the danger of collapse may not become greater than that prescribed in the same paragraph.

Article 357 (1) When carrying out the excavating work of natural ground composed of sand or of natural ground in a condition liable to collapse due to blasting, etc., by manual excavation, the employer must comply with requirements set forth in the following items:

- (i) for natural ground composed of sand, to make the gradient of the excavation surface 35 degrees or less, or make the height of the excavation surface less than 5 m; and
 - (ii) for natural ground in a condition liable to collapse due to blasting, etc., to make the gradient of the excavation surface 45 degrees or less, or make the height of the excavation surface less than 2 m.
- (2) The provisions of item (ii) of the preceding Article apply mutatis mutandis to the case where it is not possible to calculate the gradient because parts of the excavation surface of the natural ground set forth in the preceding paragraph differ in slope from other parts.

(Inspection)

Article 358 When carrying out the work of open-cut excavation, the employer must take the following measures to prevent workers from dangers due to collapse of natural ground or fallen earth and rocks:

- (i) to designate an inspector and have the inspector check the workplace and the natural ground surrounding the workplace before commencing the work for the day, after a heavy rain and a moderate or greater earthquake on the existence and condition of loose stones and cracks, and changes in water content, spring water and freezing conditions; and
- (ii) to designate an inspector and have the inspector check for the existence and condition of loose stones and cracks, after blasting work, at places where the blasting work has been carried out and their surroundings.

(Appointment of Operations Chief of Excavating Natural Ground)

Article 359 As regards the work set forth in Article 6, item (ix) of the Order, the employer must appoint an operations chief of excavating natural ground from the persons who have completed the skill training course for operations chief of excavating natural ground and shoring.

(Duties of the Operations Chief of Excavating Natural Ground)

Article 360 The employer must have the operations chief of excavating natural ground carry out the following matters:

- (i) to decide the work method and directly supervise the work;
- (ii) to inspect the instruments and tools, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

(Prevention of Dangers Due to Collapse of Natural Ground)

Article 361 In carrying out the work of open-cut excavation, when there is a risk of endangering workers due to collapse of natural ground or fallen earth and rocks, the employer must take measures to prevent the dangers, such as setting up shoring, setting up protective nets, prohibiting workers from entering etc., in advance.

(Prevention of Dangers Due to Underground-Installed Objects)

Article 362 (1) In carrying out the work of open-cut excavation at a place in the vicinity of underground-installed objects, etc., or structures of brick walls, concrete block walls, retaining walls, etc., when there is a risk of endangering workers due to their damage, the employer must not carry out the work unless measures to prevent the dangers, such as reinforcing or removing them have been taken.

(2) The measure set forth in the preceding paragraph, in the case where there is a risk of endangering workers due to damage of gas conduits exposed by open-

cut excavation work, must be measures such as protecting the gas conduits using suspending protection, supporting protection, etc., or removing the gas conduits.

- (3) As regards the work for protecting gas conduits prescribed in the preceding paragraph, the employer must designate a person to supervise the work, and have the work carried out under the direct supervision by the person.

(Prohibition of Using Excavating Machines)

Article 363 In carrying out the open-cut excavation work, when there is a risk of endangering workers due to damage to gas conduits, underground electric line or other underground structures by the use of excavating machine, loading and transporting machines, the employer must not use those machines.

(Traveling Route of Transporting Machines)

Article 364 When carrying out the open-cut excavation work, the employer must determine in advance the traveling route for the transporting machine, excavating machine and loading machine (excluding a vehicle type construction equipment and a vehicle type material handling machine, etc.; hereinafter referred to as "transporting machine, etc." in this Chapter), and the method for entering and leaving the place for those machines to load and unload the earth and rocks, and make them known to the workers concerned.

(Arrangement of a Guide)

Article 365 (1) In carrying out the open-cut excavation work, when the transporting machine, etc., approaches the workplace by going backwards or when there is a risk of transporting machine, etc., falling, the employer must arrange a guide and have the person guide the machine, etc.

- (2) The operator of the transporting machine, etc., set forth in the preceding paragraph must follow the instruction given by the guide set forth in the same paragraph.

(Wearing Safety Helmets)

Article 366 (1) When carrying out the work of open-cut excavation, the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

- (2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

(Maintenance of Illumination)

Article 367 As regards the place where the work of an open-cut excavation is carried out, necessary illumination for safely carrying out the work must be

maintained.

Subsection 2 Shoring

(Material)

Article 368 As regards materials of shoring, the employer must not use those having marked damage, deformation or corrosion.

(Structure)

Article 369 The employer must make the structure of the shoring solid in accordance with the condition of landform, nature of the soil, strata, cracks, water content, spring water, freezing and underground-installed objects, etc., pertaining to the natural ground where the shoring is to be installed.

(Assembly Drawing)

Article 370 (1) When assembling the shoring, the employer must prepare an assembly drawing in advance, and assemble the shoring according to the drawing.
(2) The assembly drawing set forth in the preceding paragraph must indicate the arrangement, size and materials of components such as sheet piles, piles, shore laggings, wales, struts, and the time and procedures of installation.

(Installation of Components)

Article 371 As regards installation, etc. of the components of the shoring, the employer must comply with the requirements set forth in the following items:
(i) to firmly mount the wales and struts on sheet piles, piles, etc., to prevent them from coming off;
(ii) to use butt joints for joints of compression components (excluding angle braces);
(iii) to firmly fasten the connecting parts of struts or angle braces and the crossing parts of struts with doubling plates and bolts, or connect them by welding or other methods to make them solid;
(iv) for shoring with a middle support pole, to firmly mount struts on the middle support pole; and
(v) when struts are supported by things other than the components such as the columns of a building, to make the supports strong enough to bear the load applied.

(Work of Installing or Removing Struts)

Article 372 When carrying out the work set forth in Article 6, item (x) of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the place where the work is carried out; and
- (ii) when raising or lowering materials, instruments or tools, to have workers use lifting ropes, lifting bags, etc.

(Inspection)

Article 373 When having installed shoring, the employer must inspect the following matters once every period not exceeding seven days, after a moderate or greater earthquake, and after the occurrence of a situation that has a risk of rapidly weakening the ground due to heavy rain, etc., and immediately reinforce or make repairs when having found any abnormality:

- (i) existence and condition of damage, deformation, corrosion, displacement and coming off of components;
- (ii) degree of compression of struts; and
- (iii) condition of the connecting parts, mounting parts and crossing parts of components.

(Appointment of Operations Chief of Shoring)

Article 374 As regards the work set forth in Article 6, item (x) of the Order, the employer must appoint an operations chief of shoring from the persons who have completed the skill training courses for operations chief of excavating natural ground and shoring.

(Duties of the Operations Chief of Shoring)

Article 375 The employer must have the operations chief of shoring carry out the following matters:

- (i) to decide the work method and directly supervise the work;
- (ii) to check for defects in material and inspect instruments and tools, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

Subsection 3 Work in Caissons

(Diagram on Subsidence)

Article 376 When carrying out the open-cut excavation work inside a caisson or inside a well curb, the employer must take the following measures to prevent dangers to workers due to the rapid subsidence of the caisson or well curb:

- (i) to determine the method of excavation, the quantity of load, etc., based on the diagram on subsidence;
- (ii) to have the height from the cutting edge to the ceiling or the girder 1.8 m or higher.

(Work Inside a Caisson)

Article 377 (1) When carrying out the open-cut excavation work inside a caisson, a well curb, a vertical shaft, a well or other buildings or facilities equivalent to them (hereinafter referred to as "caissons, etc."), the employer must take the following measures:

- (i) when there is a risk of the quantity of oxygen becoming excessive, to designate a person in charge of measuring the concentration of oxygen, and have the person measure the concentration;
 - (ii) to provide facilities for workers to safely ascend to and descend from the workplace;
 - (iii) when the depth of excavation exceeds 20 m, to provide devices such as a telephone, an electric bell, etc., for communication between the workplace and the outside.
- (2) In the case referred to in the preceding paragraph, when excessive oxygen is found as a result of the measurement set forth in item (i) of the same paragraph, or when the depth of excavation has exceeded 20 m, the employer must provide facilities for air supply and send the necessary quantity of air using the facilities.

(Prohibition of Work)

Article 378 In the case falling under any of the following items, the employer must not carry out the open-cut excavation work inside caissons, etc.:

- (i) when the facilities set forth in paragraph (1), item (ii) or (iii) of the preceding Article or in paragraph (2) of the same Article are out of order; or
- (ii) when there is a risk of a large quantity of water entering into the caissons, etc.

Section 2 Construction Work of Tunnels

Subsection 1 Investigations

(Investigation and Record)

Article 379 When carrying out the excavating work of tunnels, etc., the employer must investigate in advance the landform of natural ground and condition of the nature of the soil and strata pertaining to the excavation work by boring or other appropriate method in order to prevent workers from dangers due to cave-in, inundation, gas explosion, etc., and record the result of the investigation.

(Construction Plan)

Article 380 (1) When carrying out excavating work of tunnels, etc., the employer

must formulate in advance a construction plan that conforms to what became known by the investigation prescribed in the preceding Article, and carry out the work according to the plan.

- (2) The construction plan set forth in the preceding paragraph must indicate the following matters:
 - (i) the method of excavation; and
 - (ii) the method of construction of tunnel shoring, construction of lining, disposal of spring water or flammable gas, and ventilation or illumination when these operations are to be carried out.

(Observation and Record)

Article 381 (1) When carrying out excavating work of tunnels, etc., the employer must observe the following matters at the excavation site and the natural ground surrounding the site each day in order to prevent dangers to workers due to cave-in, inundation, gas explosion, etc., and record the results of the observation:

- (i) condition of nature of the soil and strata;
 - (ii) existence and condition of water content, and spring water;
 - (iii) existence and condition of flammable gas; and
 - (iv) existence and condition of high-temperature gas or vapor.
- (2) When the excavation is carried out by the method in which excavation site and its surrounding natural ground are covered with a machine, the observation pertaining to the matters set forth in item (iii) of the preceding paragraph must be carried out using a measuring instrument.

(Inspection)

Article 382 When carrying out the construction work of tunnel, etc., (meaning excavating work of tunnels, etc., or transportation of muck, materials, etc., or lining concrete placing, etc., associated with the excavating work (limited to the work carried out inside the tunnel, etc., or at a place in the vicinity of the tunnel, etc.); the same applies hereinafter), the employer must take the following measures to prevent the dangers to workers due to cave-in or falling of rocks:

- (i) to designate an inspector and have the person inspect the ground inside the tunnels, etc., each day and after a moderate or greater earthquake on the existence and condition of loose stones and cracks, and changes in the condition of water content and spring water; and
- (ii) to designate an inspector and after blasting work is carried out, have the person inspect the location where the blasting work has been carried out and its surroundings on the existence and condition of loose stones and cracks.

(Measurement of the Concentration of Flammable Gas)

Article 382-2 In carrying out the construction work of tunnels, etc., when there is a risk of flammable gas to be generated, the employer must designate a person in charge of measuring the concentration of the flammable gas in order to prevent explosion or fire, and have the person measure and record the concentration of the flammable gas at the places where there is a risk of the flammable gas to be generated or stagnate each day before commencing the work for the day, after a moderate or greater earthquake or when having found any abnormality related to the flammable gas.

(Installation of Automatic Warning Devices)

Article 382-3 (1) When it is found as a result of the measurement set forth in the preceding Article that the flammable gas exists which may cause an explosion or fire, the employer must install automatic warning devices at necessary places for an early detection of abnormal rise in the concentration of the flammable gas. In this case, the automatic warning devices must have a mechanism that enables to quickly alert workers who are working around the area of the detectors of the devices of the abnormal rise in the concentration of the flammable gas.

(2) As regards the automatic warning device set forth in the preceding paragraph, the employer must inspect the following matters before commencing the work for the day, and immediately make repairs when having found any abnormality:

- (i) abnormalities in measuring gauges;
- (ii) abnormalities in detectors; and
- (iii) function of the alarms.

(Alteration in Construction Plan)

Article 383 In carrying out excavating work of tunnels, etc., when the construction plan set forth in Article 380, paragraph (1) becomes unsuitable to the conditions of natural ground which became known by the observation pursuant to the provisions of Article 381, paragraph (1), the inspection pursuant to the provisions of Article 382, the measurement pursuant to the provisions of Article 382-2, etc., the employer must change the construction plan without delay so that suits the conditions of the natural ground, and carry out the excavating work according to the changed construction plan.

(Appointment of an Operations Chief of Excavating Tunnel)

Article 383-2 As regards the work set forth in Article 6, item (x)-2 of the Order, the employer must appoint an operations chief of excavating tunnel, etc., from the persons who have completed the skill training course for operation chief of

excavating tunnel, etc.

(Duties of the Operations Chief of Excavating Tunnel)

Article 383-3 The employer must have the operations chief of excavating tunnel, etc., carry out the following matters:

- (i) to decide the work method and arrangement of workers, and directly supervise the work;
- (ii) to inspect the functions of the instruments, tools, safety belts, etc., and safety helmets, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

(Appointment of an Operations Chief of Lining of Tunnel)

Article 383-4 As regards the work set forth in Article 6, item (x)-3 of the Order, the employer must appoint an operations chief of lining of tunnel, etc., from the persons who have completed the skill training course for operations chief of lining of tunnel, etc.

(Duties of the Operations Chief of Lining of Tunnel)

Article 383-5 The employer must have the operations chief of lining of tunnel, etc., carry out the following matters:

- (i) to decide the work method and arrangement of workers, and directly supervise the work;
- (ii) to inspect the functions of instruments, tools, safety belts, etc., and safety helmets, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

Subsection 1-2 Prevention of Dangers Due to Cave-in and Collapse of Natural Ground

(Prevention of Dangers Due to Cave-in)

Article 384 In carrying out the construction work of tunnels, etc., when there is a risk of endangering workers due to a cave-in or fall of rocks, the employer must take measure such as providing tunnel shoring, use lock bolts and removing loose stones in order to prevent such dangers.

(Prevention of Dangers Due to Collapse of Natural Ground in the Vicinity of the Entrance)

Article 385 In carrying out the construction work of tunnels, etc., when there is a risk of endangering workers due to collapse of natural ground or fallen soil and stones in the vicinity of the entrance or exit of the tunnels, etc., the employer must take measures such as providing shoring, setting up protective

nets and removing loose stones in order to prevent such dangers.

(Prohibition of Entry)

Article 386 The employer must not have workers other than those concerned enter the following places:

- (i) places where the work to remove loose stones is being carried out or below those places, where there is a risk of endangering workers due to fallen loose stones; and
- (ii) places where the work of reinforcing or repairing tunnel shoring is being carried out and where there is a risk of endangering workers due to cave-in or falling of rocks.

(Maintenance of Visibility)

Article 387 In carrying out construction work of tunnels, etc., when visibility inside tunnels, etc., is highly limited by exhaust gas, dust, etc., the employer must take measures such as ventilating tunnels, etc., spraying water in order to maintain the visibility necessary to safely carry out the work.

(Application, Mutatis Mutandis)

Article 388 The provisions of Articles 364 through 367 apply mutatis mutandis to construction work of tunnels, etc.

Subsection 1-3 Prevention of Explosions and Fires

(Prohibition against Carrying Ignitable Objects)

Article 389 When it is found as a result of the measurement pursuant to the provisions of Article 382-2 that flammable gas exists, the employer must prohibit workers from carrying fire, matches, lighters or other ignitable objects into the inside of the tunnels, etc., , excluding the cases where it is unavoidable due to the nature of the work, and display a notice to that effect at a readily visible place in the vicinity of the entrance of the tunnels, etc.

(Measures in the Case Automatic Warning Device is Activated)

Article 389-2 The employer must establish measures that the workers concerned should take to prevent an explosion or fire due to flammable gas when the automatic warning device set forth in Article 382-3 is activated, in advance, and make the measures known to the workers.

(Measures to Remove Gas)

Article 389-2-2 In carrying out the excavating work of tunnels, etc., when flammable gas is liable to be generated, the employer must take measures to

remove the gas by boring and other necessary measures to prevent the flammable gas from flowing out in order to prevent explosion or fire due to the flammable gas.

(Measures to Prevent Fire in Carrying Out Work of Gas Welding)

Article 389-3 In carrying out the construction work of tunnels, etc., when the work of welding, cutting or heating metals using the flammable gas and oxygen is carried out inside the tunnels, etc., the employer must take the following measures to prevent fire:

- (i) to remove rags, wood chips, paper scraps or other flammable objects lying around inside, cover them with nonflammable objects, or install partitions to prevent sparks arising from the work;
- (ii) to have the supervisor set forth in Article 257 carry out the following matters in addition to matters set forth in each item of the same Article:
 - (a) to inform to the workers engaging in the work the location of fire extinguishing equipment and the method of using the equipment;
 - (b) to monitor the work process and immediately take necessary measure when having found any abnormality; and
 - (c) to confirm that there is no risk of fire due to sparks, etc., after the work is completed.

(Person in Charge of Fire Prevention)

Article 389-4 In carrying out the construction work of tunnels, etc., as regards the places inside the tunnel, etc., where fire or arc is used (excluding places where the work set forth in the preceding Article is carried out), the employer must designate a person in charge of fire prevention and have the person carry out the following matters to prevent fire:

- (i) to monitor the status of use of fire or arc and immediately take necessary measures when having found any abnormality; and
- (ii) to confirm that remaining fire has been properly extinguished.

(Fire Extinguishing Equipment)

Article 389-5 When carrying out construction work of tunnels, etc., the employer must install fire extinguishing equipment suitable for the nature of fire that is expected to break out at appropriate locations in the places where fire or arc is used inside the tunnels, etc., or where a switch board, transformer or circuit breaker is installed, and inform the workers concerned of the location of the fire extinguishing equipment and the method of using the equipment.

(Construction Work of Vertical Shafts)

Article 389-6 The provisions of the preceding three Articles apply mutatis

mutandis to the construction work of vertical shafts.

Subsection 1-4 Evacuations

(Evacuation)

Article 389-7 In carrying out the construction work of tunnels, etc., when there is imminent danger of an industrial accident occurring by cave-in, inundation, etc., the employer must immediately suspend the work and evacuate the workers to a safe place.

Article 389-8 (1) In carrying out the construction work of tunnels, etc., when having found that the concentration of the flammable gas inside the tunnel has reached 30% or more of the lower explosion limit, the employer must immediately evacuate the workers to a safe place, discontinue the use of fire or other ignitable objects and take measures for airing, ventilation, etc.

(2) In the case referred to in the preceding paragraph, the employer must prohibit workers other than those concerned from entering the inside of the tunnels, etc., and display a notice to that effect at a readily visible location until it is confirmed that the concentration of the flammable gas is below 30% of the lower explosion limit.

(Warning Devices)

Article 389-9 (1) When carrying out the construction work of tunnels, etc., the employer must install the devices listed in the following items in accordance with the classification listed in each item, in order to promptly give warning to the workers concerned in the case of cave-in, inundation, gas explosion, fire or other emergencies, and inform the workers concerned of the places where the devices are installed:

(i) when the distance from the entrance of the tunnels, etc., to the working face (hereinafter referred to as "distance to the working face" in this Subsection) has reached 100 m (excluding the case listed in the following item): warning devices such as sirens and emergency bells (hereinafter referred to as "warning devices" in this Article); and

(ii) when the distance to the working face has reached 500 m: communication equipment such as warning devices, and telephones, etc. (limited to those enabling communication between the inside and the outside of the tunnel, etc.; hereinafter referred to as "communication equipment" in this Article).

(2) The employer must maintain the proper functioning of the warning devices and communication equipment set forth in the preceding paragraph at all times.

(3) The employer must install a reserve power source, which can be used

immediately when an abnormality arises in the power source for the warning devices and communication equipment set forth in paragraph (1).

(Apparatuses for Evacuation)

Article 389-10 (1) When carrying out the construction work of tunnels, etc., the employer must provide the apparatuses listed in the following items in accordance with the classification listed in each item at appropriate locations, in order to evacuate the workers concerned in the case of cave-in, inundation, gas explosion, fire or other emergencies, and inform the workers concerned of the locations of the apparatuses and the method of using the apparatuses:

- (i) for the tunnels, etc., other than those where flammable gas exists and where there is a risk of explosion or fire (excluding the case listed in item (iii)), and when the distance to the working face has reached 100 m: portable lighting apparatuses such as flashlights (hereinafter called "portable illumination apparatuses" in this Article) and other apparatuses necessary for evacuation;
- (ii) for the tunnels, etc., where flammable gas exists and where there is a risk of explosion or fire (excluding the case listed in the following item), and when the distance to the working face has reached 100 m: respiration apparatuses such as survival equipment against carbon monoxide (hereinafter referred to as "respiration apparatuses" in this Article), portable illumination apparatuses and other apparatuses necessary for evacuation; and
- (iii) when the distance to the working face has reached 500 m: respiratory protective equipment, portable illumination apparatuses and other apparatuses necessary for evacuation.

(2) As regards the respiratory protective equipment set forth in the preceding paragraph, the employer must provide the number of equipment equal to or more than the number of workers working at the same time (excluding persons engaging in the work in the vicinity of the entrance; the same applies in the following paragraph), and maintain their functioning and cleanliness at all times.

(3) As regards the portable illumination apparatuses set forth in paragraph (1), the employer must provide the number of apparatuses equal to or more than the number of workers working at the same time, and maintain them to effectively function at all times; provided, however, that this does not apply to the case referred to in item (i) of the same paragraph, and when measures to secure illumination for the evacuation of workers working at the same time as a group have been taken.

(Evacuation Drills)

Article 389-11 (1) When carrying out the construction work of a tunnel, etc., at the place where the distance to the tunnel face is 100 m or more (500 m for a

tunnel, etc., other than those where flammable gas exists and where there is a risk of explosion or fire) the employer must conduct an evacuation drill and fire drill (hereinafter referred to as "evacuation drill, etc.") for the workers concerned once during the period before the distance to the tunnel face reaches 100 m and once every period not exceeding six months thereafter in order to prepare for cave-in, inundation, gas explosion, fire, etc.

- (2) When having conducted the evacuation drill, etc., the employer must record the following matters and preserve the record for three years:
- (i) the date the drill was conducted;
 - (ii) the name of the persons who have undergone the drill; and
 - (iii) the details of the drill.

Subsection 2 Tunnel Shoring

(Materials)

Article 390 (1) The employer must not use materials having marked damage, deformation or corruptions as materials for tunnel shoring.

- (2) As regards the wooden materials for tunnel shoring, the employer must not use the materials unless they are materials of Japanese red pine or black pine, and other wood that have toughness and are free from the marked defects for strength such as cracks, worm-eaten spots, gnarls and slanted fibers.

(Structure of Tunnel Shoring)

Article 391 The employer must make the structure of tunnel shoring solid in accordance with the condition of nature of the soil, strata, water content, spring water, cracks and loose stones pertaining to the natural ground where the tunnel shoring is to be installed and the method of excavation.

(Standard Drawing)

Article 392 (1) When assembling the tunnel shoring, the employer must prepare in advance a standard drawing, and assemble the shoring according to the standard drawing.

- (2) The standard drawing prescribed in the preceding paragraph must indicate the layout, size and materials of the components of the tunnel shoring.

(Assembly or Alteration)

Article 393 When assembling or altering the tunnel shoring, the employer must comply with the requirements set forth in the following items:

- (i) to lay out a set of components composing the main component on the same plane; and
- (ii) for wooden tunnel shoring, to make the degree of compression of each

component of the tunnel shoring the same level.

(Prevention of Dangers of Tunnel Shoring)

Article 394 As regards tunnel shoring, the employer must comply with the requirements set forth in the following items:

- (i) to take measures such as providing sill plates to the leg part to prevent the part from subsiding;
- (ii) for steel arch shoring, to comply with the following requirements:
 - (a) to make the support spacing 1.5 m or less;
 - (b) to take measures such as driving wedges so that the main components create sufficient arch action;
 - (c) to firmly join main components with each other using connecting bolts and connecting girders, bracings, etc.;
 - (d) to provide slant props at the entrance of tunnels, etc.;
 - (e) when there is a risk of steel arch shoring falling or becoming twisted due to the longitudinal load of tunnels, etc., being applied to the shoring, when longitudinal length of tunnels, etc., supported by steel arch shoring is short, to take measures to prevent the steel arch shoring from falling or becoming twisted, such as providing slant props to parts other than the parts of the entrance of the tunnels, etc.;
 - (f) when there is a risk of endangering workers due to falling of rocks, to provide sheet piles, wooden sheets, linier plates, etc.;
- (iii) for wooden prop type shoring, to comply with following requirements:
 - (a) to fasten sleepers to the ground with nose girders, etc., to prevent displacement;
 - (b) to provide slant props at both ends;
 - (c) when there is a risk of wooden prop type shoring falling or becoming twisted due to the longitudinal load of tunnels, etc., being applied to the shoring, to take measures to prevent wooden prop typed shoring from falling or becoming twisted, such as providing slant props to parts other than both ends;
 - (d) to make the connecting parts of components fit smoothly and tightly fasten them using clamps, etc.;
 - (e) to not place caps within the vertical plane including longitudinal bar braces or girders collar braces;
 - (f) to have the longitudinal bar braces and girder collar braces create sufficient arch action; and
- (iv) for tunnel shoring other than steel arch shoring and wooden prop type shoring, to provide slant props at the part of the entrance of tunnels, etc.

(Removal of Components)

Article 395 When removing components of tunnel shoring to which a load is applied, the employer must not remove the components unless measures to remove the load applied to the components to tunnel concrete form shoring, etc. have been taken.

(Inspection)

Article 396 When having installed tunnel shoring, the employer must inspect the following matters each day and after a moderate or greater earthquake, and immediately reinforce or repair the shoring when having found any abnormality:

- (i) existence and condition of damage, deformation, corrosion, displacements and coming off of the components;
- (ii) degree of compression of the components;
- (iii) condition of the connecting parts and crossing parts of the components; and
- (iv) existence and condition of subsidence of the leg parts.

Subsection 3 Tunnel Concrete Form Shoring

(Materials)

Article 397 The employer must not use materials having marked damage, deformation or corrosion as materials for tunnel concrete form shoring.

(Structure)

Article 398 The employer must make the structure of tunnel concrete form shoring solid in accordance with the load applied to the tunnel concrete form shoring, the shape of the concrete form, etc.

Section 3 Quarrying Work

Subsection 1 Investigation and Quarrying Work Plan

(Investigation and Record)

Article 399 When carrying out the quarrying work (meaning excavating work for collecting rocks, work of cutting in-blocks, processing and transporting rocks at the quarry, and other work associated with these operations; the same applies hereinafter), the employer must investigate in advance the landform and condition of the nature of the soil and strata pertaining to the quarrying work in order to prevent workers from dangers due to collapse of the natural ground, falling of excavating machines, etc., and record the result of the investigation.

(Quarrying Work Plan)

Article 400 (1) When carrying out the quarrying work, the employer must

formulate in advance a quarrying work plan that conform with what became known by the investigation pursuant to the provisions of the preceding Article, and carry out the work according to the work plan.

(2) The quarrying work plan set forth in the preceding paragraph must indicate the following matters:

- (i) in making a distinction between open casting or underground casting and for open casting, the distinction among the step quarrying system, slope quarrying system or glory hole system;
- (ii) the height and gradient of the excavation surface;
- (iii) the position and depth of the steps of the excavation surface;
- (iv) the method of preventing cave-in, falling of rocks, and collapse of sidewalls in the pit;
- (v) the method of blasting;
- (vi) the method of breaking rocks into small pieces;
- (vii) the place for processing rocks;
- (viii) the method of loading, transporting earth and sand or rocks and the route of transportation;
- (ix) the type and capability of excavating machines, machines for breaking rocks into small pieces, loading machines or transporting machines to be used; and
- (x) the method of disposing surface earth or spring water.

(Inspection)

Article 401 When carrying out quarrying work, the employer must take the following measures for preventing dangers to workers due to collapse of the natural ground or falling of earth and rocks:

- (i) to designate an inspector and have the person check the workplace and the natural ground surrounding the workplace, before commencing the work for the day, after a heavy rain and a moderate or heavier earthquake, for the existence and condition of loose stones and cracks, and changes in the condition of water content, spring water and freezing; and
- (ii) to designate an inspector and have the person check the place where blasting has been carried out and its surroundings for the existence and condition of loose stones and cracks, after blasting.

(Alteration in Quarrying Work Plan)

Article 402 In carrying out the quarrying work, when the quarrying work plan prescribed in Article 400, paragraph (1) has become unsuitable to the condition of the natural ground which became known by the inspection pursuant to the provisions of the preceding Article, etc., the employer must change the quarrying work plan so that it suits the condition of the ground without delay,

and carry out the quarrying work according to the changed quarrying work plan.

(Appointment of an Operations Chief of Excavating for Quarrying)

Article 403 As regards the work set forth in Article 6, item (xi) of the Order, the employer must appoint an operations chief of excavating for quarrying from the persons who have completed the skill training course for operations chief of excavating for quarrying.

(Duties of the Operations Chief of Excavating for Quarrying)

Article 404 The employer must have the operations chief of excavating for quarrying carry out the following matters:

- (i) to decide the work method and directly supervise the work;
- (ii) to inspect defects in materials, and instruments and tools, and remove those defective;
- (iii) to monitor the use of safety belts, etc., and safety helmets; and
- (iv) to instruct the method of evacuation in advance.

(Maintenance of Communication with Adjacent Quarries)

Article 405 To prevent workers from dangers due to collapse of natural ground, earth and rocks, etc., that come flying, the employer must maintain communication with adjacent quarries on the necessary matters such as time of blasting, the method of removal of loose stones which are adopted in the adjacent quarries.

(Maintenance of Illumination)

Article 406 As regards the place where the quarrying work is carried out, the employer must maintain the necessary illumination for carrying out the work safely.

Subsection 2 Prevention of Dangers Due to Collapse of Natural Ground

(Standards for Gradient of Excavation Surface)

Article 407 When carrying out the excavating work for quarrying (excluding the work in a pit; hereinafter the same applies in this Article), the employer must make the gradient of the excavation surface equivalent to or less than the value listed in the right column of the following Table in accordance with the type of natural ground listed in the left column of the same Table and the height of the excavation surface listed in the middle column of the same Table, respectively; provided however, that this does not apply to the case of carrying out the excavating work using excavating machines such as a power shovel and

a tractor shovel, and when there is no risk of endangering the operator of the excavating machine due to collapse of natural ground or falling of earth and rocks:

Type of Natural Ground	Height of Excavation Surface (Unit: m)	Gradient of Excavation Surface (Unit: Degrees)
(1) Natural ground composed of rock beds having no cracks that may cause collapse or fall	Less than 20	90
	20 or more	75
(2) Natural ground composed of rock beds other than those listed in the preceding item	Less than 5	90
	5 or more	60
(3) Natural ground other than those listed in each of the preceding item	Less than 2	90
	2 or more	45

(Prevention of Dangers Due to Collapses)

Article 408 In carrying out the quarrying work (excluding work carried out in a pit), when there are earth and rocks, standing trees, etc., which have the risk of endangering workers due to collapsing or falling, the employer must take measures to prevent the dangers, such as removing them, providing a protective net, etc., in advance.

(Prevention of Dangers Due to Cave-in)

Article 409 In carrying out quarrying work in a pit, when there is a risk of endangering workers due to cave-in, falling rocks or collapsing of sidewalls, the employer must take measures to prevent the dangers, such as providing supports or residual poles, making the ceiling an arch, using lock bolts, etc.

(Prohibition of Work in the Vicinity of Excavation Sites)

Article 410 The employer must not carry out the work of breaking rocks into small pieces or rock processing work in the vicinity of an excavation site; provide, however, that this does not apply when it is considerably difficult to move the rocks to other places.

(Prohibition of Entry)

Article 411 The employer must not have workers enter a place below the place where excavating work for collecting rocks are carried out and where there is a risk of endangering workers due to falling of earth and rocks.

(Wearing of Safety Helmets)

Article 412 (1) When carrying out quarrying work, the employer must have the workers engaging in the work wear a safety helmet in order to prevent them from dangers due to objects that come flying or falling.

(2) A worker, when having been instructed to wear a safety helmet set forth in the preceding paragraph, must wear the safety helmet set forth in the same paragraph.

Subsection 3 Prevention of Dangers Due to Transporting Machines

(Traveling Route of Transporting Machines)

Article 413 (1) When carrying out quarrying work, the employer must determine in advance the traveling route of transporting machines, etc., and machines for breaking rocks into small pieces, and the method of entering and leaving from the loading and unloading site of earth and rocks of those machines, and make the traveling route and the method known to the workers concerned.

(2) As regards the traveling route set forth in the preceding paragraph, the employer must take the following measures:

(i) to maintain a sufficient width;

(ii) to prevent collapse of shoulders;

(iii) to prevent the ground from weakening; and

(iv) to provide signs or a railing at necessary places.

(3) When carrying out repairs or other work for maintaining the traveling route set forth in paragraph (1), the employer must place a watcher or display a notice indicating that the work is under way.

(Prohibition of Work on the Traveling Route)

Article 414 The employer must not carry out work of breaking rocks into small pieces or rocks processing work on the traveling route set forth in paragraph (1) of the preceding Article; provided, however, that this does not apply when it is inevitable and when measures to prevent workers from dangers due to coming into contact with a transporting machine or a machine for breaking rocks into small pieces, such as placing a watcher or displaying a notice indicating that the work is under way.

(Prohibition of Entry)

Article 415 When carrying out the quarrying work, the employer must not have workers enter a place where there is a risk of endangering workers due to coming into contact with a transporting machine or a machine for breaking rocks into small pieces during operation.

(Placing a Guide)

Article 416 (1) In carrying out the quarrying work, when a transport machine, etc., and a machine for breaking rocks into small pieces approach the workplace by going backwards, or there is a risk of the machines falling, the employer must place a guide and have the person guide the transporting machine, etc., and the machine for breaking rocks into small pieces.

(2) The worker operating the transporting machine, etc., and the machine for breaking rocks into small pieces set forth in the preceding paragraph must follow the instruction given by the guide set forth in the same paragraph.

Chapter VII Prevention of Dangers in Cargo Handling Work

Section 1 Freight Handling Work

Subsection 1 Loading and Unloading Cargo

Article 417 Deleted

(Prohibition of Using Inadequate Fiber Rope)

Article 418 The employer must not use a fiber rope that falls under any of the following items for roping cargos on a freight vehicle:

- (i) those with cut strands; or
- (ii) those with marked damage or corrosion.

(Inspection)

Article 419 When using a fiber rope for roping cargos on a freight vehicle, the employer must check the rope before commencing the use for the day, and immediately replace it when having found any abnormality.

(Appointment and Duties of the Operations Supervisor)

Article 420 When carrying out the work of loading a cargo with the weight of 100kg or more on a freight vehicle (including the work of roping and sheeting) or unloading the cargo from a freight vehicle (including the work of unroping and unsheeting), the employer must designate a supervisor for the work, and have the person carry out the following matters:

- (i) to decide the method and procedures of the work, and supervise the work;
- (ii) to inspect instruments and tools, and remove those defective;
- (iii) to not have workers other than those concerned to enter the place where the work is carried out; and
- (iv) when carrying out the work of unroping and unsheeting, to instruct the commencement of the work after having confirmed that there is no risk of cargo on the vehicle platform to fall off.

(Prohibition of Pulling Out Middle Cargo from the Piling)

Article 421 (1) When carrying out the work of unloading cargos from a freight vehicle, the employer must not have the worker engaging in the work to pull out the middle cargo from the piling.

(2) The worker engaging in the work set forth in the preceding paragraph must not pull out the middle cargo from the piling.

Articles 422 through 425 Deleted

(Workshop for Stevedoring at Wharves)

Article 426 The employer must take the following measures for places where stevedoring work is carried out such as wharfs and quays:

- (i) to take safe and effective measures to provide illumination for dangerous parts of workshop and passages;
- (ii) when providing a passage along the wharf or quay, to make the width of the passage 90 cm or wider, and remove from that area obstacles other than stationary facilities and devices in use; and
- (iii) to provide an appropriate enclosure, railing, etc., for dangerous parts of passages and workshop on shore, such as angular corner, bridges, and footpaths over the lock gate of a dock.

Subsection 2 Stacking and Unstacking Cargo

(Ascending and Descending Equipment for Cargo Piles)

Article 427 (1) In carrying out the work on cargo piles (a group of piled cargos (excluding bulk cargos of wheat, soy beans, ores, etc.) piled up in a warehouse, shed or cargo piling place; the same applies hereinafter), when the height of the workplace exceeds 1.5 m from the floor surface, the employer must provide an equipment for the worker engaging in the work to safely ascend and descend between the floor surface and the workplace; provided, however, that this does not apply to the case where a safe ascent and descent is possible by using the cargos composing the cargo pile.

(2) The worker engaging in the work set forth in the preceding paragraph, when ascending and descending between the floor surface and the workplace, must use the equipment for ascending and descending set forth in the same paragraph, excluding the case set forth in the proviso of the same paragraph.

(Appointment of an Operations Chief of Cargo Piling)

Article 428 As regards the work set forth in Article 6, item (xii) of the Order, the employer must appoint an operations chief of cargo piling from the persons who

have completed the skill training course for operations chief of cargo piling.

(Duties of the Operations Chief of Cargo Piling)

Article 429 The employer must have the operations chief of cargo piling carry out the following matters:

- (i) to decide the method and procedures of the work, and directly supervise the work;
- (ii) to inspect instruments and tools, and remove those defective;
- (iii) in order to have the workers who pass through the workplace safely pass through, to instruct the necessary matters for them;
- (iv) when carrying out cargo stacking operation, to instruct the commencement of the operation after having confirmed that there is no risk of the cargo piling to collapse; and
- (v) to monitor the use of the equipment for ascending and descending set forth in Article 427, paragraph (1), and the use of safety helmets.

(Spacing between Cargo Piles)

Article 430 As regards the cargo pile having a height of 2 m or more from the floor surface (limited to those composed of cargos, containers whose are sacks, straw bags or bales), the employer must ensure that the spacing between the cargo pile and the adjacent cargo pile is 10 cm or more at the lower end.

(Cargo Unstacking Operation)

Article 431 (1) When carrying out the cargo unstacking operation for a cargo pile having a height of 2 m or more from the floor surface, the employer must have the worker engaging in the work carry out the following matters:

- (i) to not pull out middle cargo from the pile; and
 - (ii) for a cargo pile composed of cargos whose containers are sacks, straw bags or bales, to break the cargo pile in tiers, and make the height of each tier (excluding the lowest tier) 1.5 m or less.
- (2) The worker engaging in the work set forth in the preceding paragraph must carry out the matters listed in each item of the same paragraph.

(Prevention of Dangers of Cargo Piles Collapsing)

Article 432 When there is a risk of endangering workers due to cargo piles collapsing or cargos falling, the employer must take measures to prevent the dangers such as fastening the cargo piles with ropes, setting a net over the cargo piles, providing preventive posts, restacking the cargo piles, etc.

(Prohibition of Entry)

Article 433 The employer must not have workers other than those concerned

enter the place where the cargo stacking or unstacking operation is being carried out and where there is a risk of endangering workers due to cargo piles collapsing or cargos falling.

(Maintenance of Illumination)

Article 434 As regards a place where the cargo stacking or unstacking operation is carried out, the employer must maintain necessary illumination for safely carrying out the operation.

(Wearing of Safety Helmets)

Article 435 (1) When carrying out the work on a cargo pile (limited to the workplace with the height of 2 m or more from the floor surface), the employer must have workers engaged in the work wear safety helmets in order to prevent dangers to workers from falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Articles 436 through 448 Deleted

Section 2 Stevedoring Work

Subsection 1 Facilities for Passage

(Facilities for Passage to the Hold)

Article 449 (1) When carrying out the cargo handling work inside a hold having a depth exceeding 1.5 m from the exposed deck, the employer must provide facilities that enable the worker engaging in the work to pass safely between the deck and the hold; provided, however, that this does not apply if facilities for safe passage have already been provided in the ship.

(2) The worker engaging in the work set forth in the preceding paragraph must use the facilities for passage set forth in the same paragraph when passing between the exposed deck and the hold.

(Appointment of an Operations Chief of Stevedores)

Article 450 As regards the work set forth in Article 6, item (xiii) of the Order, the employer must appoint an operations chief of stevedores from the persons who have completed the skill training course for operations chief of stevedores.

(Duties of the Operations Chief of Stevedores)

Article 451 The employer must have the operations chief of stevedores carry out the following matters:

(i) to decide the work method and directly supervise the work;

- (ii) to inspect and maintain the facilities for passage, the cargo handling machine, the personal protective equipment, instruments and tools, and monitor their use; and
- (iii) to communicate and coordinate with workers at surrounding work sites.

(Prohibition of Passage)

Article 452 In carrying out operations of raising or lowering cargo using cargo lifting appliance, cranes, mobile cranes, or derricks (hereinafter referred to as "cargo lifting appliance, etc." in this Section), when there is a risk of cargos falling or hitting workers who uses the facilities for passage set forth in of Article 449, paragraph (1), the employer must not have workers pass through the facilities.

(Prohibition of Entry)

Article 453 The employer must not have a worker enter the following places:

- (i) places located below the place where the work of opening or shutting a hatch board, or mounting or removing a hatch beam is carried out, and where there is a risk of endangering workers due to a hatch board or hatch beam falling; and
- (ii) places where the work of raising or lowering the boom of cargo lifting appliance is carried out, where there is a risk of endangering workers due to the boom falling.

(Maintenance of Illumination)

Article 454 When carrying out the work of stevedoring (meaning the work of loading cargos to a vessel, unloading cargos from a vessel, or moving cargos in a vessel; the same applies hereinafter), the employer must maintain necessary illumination for safely carrying out the work.

Subsection 2 Loading and Unloading of Cargo

(Prevention of Dangers Due to Harmful Substances and Dangerous Goods)

Article 455 Before commencing the stevedoring work, the employer must investigate whether or not substances that may cause acute poisoning such as chlorine, cyanic acid and tetraalkyl lead, corrosive liquids or other corrosive substances, gunpowder or dangerous goods exist in the cargo in the hold, on the exposed deck or on the quay where the work is carried out, and when the substances exist, take the following measures:

- (i) to determine the method of safe handling of the substances and make the method known to the worker engaging in the work, and have them follow the method in carrying out the work; and

(ii) to determine the measures to be taken when the substances are scattered or leak and make the measures known to the workers engaging in the work, and have them take the measures in the case where scattering or leaking of the substances occur.

(Inspection of Hatch Beam)

Article 456 When carrying out the work of hoisting cargo from the hold or lowering cargo into the hold with cargo lifting appliance, etc., the employer must check the condition of fastening of the hatch beam or the opened hatch board with a hinge, and must not have workers engage in the work unless having confirmed that they have been securely fastened.

(Confirmation of Removal of Shifting Boards)

Article 457 In carrying out the work of unloading bulk cargos such as wheat, soy beans or corn inside the hold, when there is a risk of endangering the workers engaging in the work due to collapsing or falling of partitions to prevent cargo from moving such as shifting boards and feeder boxes, the employer must not have the workers engage in the work unless the partitions have been removed.

(Prohibition of Simultaneous Work)

Article 458 The employer must not carry out work on different tiers in the same hold at the same time; provided, however, that this does not apply if facilities to prevent cargo from falling such as protective nets and protective sheets are provided.

(Use of Unwinding Lines)

Article 459 When carrying out the work of hoisting with cargo lifting appliance, etc., the cargo in the hold other than those located directly below the hatch, the employer must move the cargos to the place directly below the hatch using unwinding lines, etc., before commencing the work.

(Mounting of Sheaves)

Article 460 When carrying out the work of unwinding or pulling in cargos using cargo lifting appliance, etc., the employer must mount sheaves used for unwinding or pulling in lines firmly on the frames of the vessel with beam clamps, shackles, etc.

(Prohibition of Entry)

Article 461 While dragging cargos with unwinding or pulling in lines using a cargo lifting appliance, etc., the employer must not have workers enter places located within the interior angle of the lines where there is a risk of

endangering workers due to the lines or sheaves coming off.

(Use of Slings with Hooks)

Article 462 When carrying out the work of hoisting cargos in drums, barrels, etc. with slings with hooks using cargo lifting appliance, etc., the employer must use drum slings or other slings with hooks having a structure that does not have a risk of the cargos to come off.

(Handling of Baled Cargo)

Article 463 (1) When carrying out the work of hoisting cotton, wool, cork etc., packaged with a bale package using cargo lifting appliance, etc., the employer must not have workers hitch sling hooks on the band irons, ropes or wires used for the cargo packaged with a bale package.

(2) The workers engaging in the work set forth in the preceding paragraph must not hitch sling hooks on the band iron, rope or wire set forth in the same paragraph.

(Wearing of Safety Helmets)

Article 464 (1) When carrying out the stevedoring work, the employer must have the workers engaging in the work wear a safety helmet in order to prevent them from dangers due to objects that come flying or falling.

(2) The workers engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Subsection 3 Handling of Cargo Lifting Appliance

(Inspection)

Article 465 When carrying out the work of hoisting or lowering cargos using a cargo lifting appliance, the employer must inspect the operating state of the appliance before commencing the work and not have the workers use the appliance unless having conformed that there is no abnormality.

(Strict Observance of Limited Load)

Article 466 The employer must not use a cargo lifting appliance with a load exceeding its limited load.

(Signals)

Article 467 (1) When carrying out the work using a cargo lifting appliance, the employer must set fixed signals for the operation of the cargo lifting appliance, designate a person who gives the signals for each cargo lifting appliance, and have the person give the signals.

- (2) When engaging in the work set forth in the preceding paragraph, the person who has been designated pursuant to the same paragraph must give the signals set forth in that paragraph.
- (3) The workers engaging in the work set forth in paragraph (1) must follow the signals set forth in the same paragraph.

(Prohibition of Leaving the Work Station)

- Article 468 (1) The employer must not allow the operator of cargo lifting appliance to leave the work station while the load is suspended.
- (2) The operator set forth in the preceding paragraph must not leave the work station while the load is suspended.

(Safety Coefficient of Wire Ropes)

- Article 469 (1) As regards the value of the safety coefficient of wire ropes used for slinging of a cargo lifting appliance, the employer must ensure the value to be six or more.
- (2) The safety coefficient set forth in the preceding paragraph is to be the value obtained by dividing the breaking load of a wire rope by the value of the maximum load applied to the wire rope.

(Safety Coefficient of Chains)

- Article 469-2 (1) The employer must ensure the value of the safety coefficient of a chain used for slinging of cargo lifting appliance to be a value equivalent to or more than the value listed in the following items in accordance with the category of the chains listed in each item:
- (i) chains falling under the all of the following requirements: 4
 - (a) those with an elongation not more than 0.5 % when loaded with one half of the breaking load;
 - (b) those with a tensile strength of 400 N/mm² or more and the elongation is of the value equivalent to or more than the value listed in the right column of the following Table in accordance with the tensile strength listed in the left column of the same Table;

Tensile Strength (Unit: N/mm ²)	Elongation (Unit: Percent)
400 or more and less than 630	20
630 or more and less than 1,000	17
1,000 or more	15

- (ii) chains other than those falling under the preceding item: 5
- (2) The safety coefficient prescribed in the preceding paragraph is to be the value obtained by dividing the value of the breaking load of the chain by the value of

the maximum load applied to the chain.

(Safety Coefficient of Hooks)

Article 470 (1) The employer must ensure that the safety coefficient of hooks or shackles used for slinging of cargo lifting appliance, is the value of five or more.
(2) The safety coefficient set forth in the preceding paragraph is to be the value obtained by dividing the value of the breaking load of a hook or a shackle by the value of the maximum load applied to the hook or shackle.

(Prohibition of Using Inadequate Wire Ropes)

Article 471 The employer must not use a wire rope falling under any of the following items for slinging of cargo lifting appliance:
(i) those with 10% or more of the element wires (excluding filler wires) cut in one strand;
(ii) those with the reduction ratio of a diameter exceeding 7% of the nominal diameter;
(iii) those with kinks; or
(iv) those with marked deformation or corrosion.

(Prohibition of Using Inadequate Chains)

Article 472 The employer must not use a chain falling under any of the following items for slinging of cargo lifting appliance:
(i) those with elongation exceeding 5% of the original length of the chain at the time of manufacture;
(ii) those with the reduction ratio of a diameter of the cross section exceeding 10% of the original diameter of the cross section of the chain at the time of manufacture; or
(iii) those with cracks.

(Prohibition of Using Inadequate Hooks)

Article 473 The employer must not use a hook, a shackle or a ring with deformation or crack for slinging of cargo lifting appliance.

(Prohibition of Using Inadequate Fiber Ropes)

Article 474 The employer must not use a fiber rope or a fiber belt falling under any of the following items for slinging of a cargo lifting appliance:
(i) those with cut strands; or
(ii) those with marked damage or corrosion.

(Wire Ropes and Chains)

Article 475 (1) As regards the non-endless type of wire ropes or chains, the

employer must not use the ropes or chains unless they are fitted with hooks, shackles, rings or eyes on both ends for slinging of cargo lifting appliance.

- (2) The eyes set forth in the preceding paragraph must be those in which eyesplicing, compressed fitting methods or other methods with the strength equal to or greater than those methods are used. In this case, the eye-splicing method is to be made by splicing all the strands of a wire rope three times or more, then cutting half of the wires of each strand, and further splicing the remaining wires more than twice (when all of the strands are spliced four times or more, at least once).

(Inspection of Slings)

Article 476 When carrying out the work using a cargo lifting appliance, the employer must inspect the condition of the slings used for the work such as a sling with a hook, a net sling and a wire sling, before commencing the work for the day, and immediately repair or replace them when having found any abnormality.

Chapter VIII Prevention of Dangers in Tree Logging Work

Section 1 Tree Logging and Bucking

(Prevention of Dangers in Tree Felling Work)

Article 477 (1) When carrying out the work of tree logging, the employer must have the worker seeking to fell standing trees carry out the following matters for each tree; provided, however, the provisions of item (i) and (iii) do not apply to the cases where hydraulic felling machines are used:

- (i) to select and determine in advance the place to evacuate when felling trees;
- (ii) to remove shrubs, branches, vines, loose stones and other objects, which has a risk of causing dangers when felling trees and during other work; and
- (iii) when chest-high diameter of trees to be felled is 40 cm or more, to make a receiving groove of a depth of one-fourth or more of the root diameter of the trees.

- (2) The worker who seeks to fell standing trees must carry out the matters listed in each item of the preceding paragraph.

(Head Guard for Hydraulic Felling Machines)

Article 478 As regards a hydraulic felling machine, the employer must not use a machine that is not equipped with a solid head guard.

(Signals of Felling)

Article 479 (1) When carrying out the work of tree logging, the employer must set fixed signals for felling and make them known to the workers concerned

with the work.

- (2) When carrying out the work of tree logging when there is a risk of endangering workers other than those engaged in the work of felling standing trees (hereinafter referred to as "other workers" in this Article) due to felling, the employer must have in advance workers engaged in the felling work of standing trees give the signals set forth in the preceding paragraph, and must not have the workers commence felling of trees unless having conformed that other workers have evacuated.
- (3) The worker engaged in the felling work set forth in the preceding paragraph, when there is a risk of dangers set forth in the same paragraph, must give signals in advance and must not commence the felling work unless having confirmed that other workers have evacuated.

(Prevention of Dangers in Work of Bucking)

- Article 480 (1) When carrying out the work of bucking, the employer must have workers engaged in the work take measures of providing stakes, stoppers, etc., to prevent the dangers due to falling or sliding of felled trees, for processed lumber, dead or damaged trees, etc. that has a risk of endangering the workers.
- (2) The worker engaging in the work set forth in the preceding paragraph must take the measures set forth in the same paragraph.

(Prohibition of Entry)

Article 481 The employer must not have workers enter a place below the place where the work of afforestation, logging, bucking, tree gathering, or yarding by chute, or log conveying (hereinafter referred to as "work of afforestation, etc." in this Section) where there is a risk of danger due to felled trees, falling or sliding of processed lumber, dead or damaged trees, etc.

(Prevention of Dangers in Yarding by Chute or Log Conveying)

- Article 482 When carrying out the work of yarding by chute or log conveying, the employer must take the following measures:
- (i) to not to have workers enter the slideway while logs are being slid; and
 - (ii) when having workers handle logs that are stopped at stopping aprons, turning devices or other parts of the slideway, to have the worker give a signal to those who are sliding logs at the upper locations to stop sliding trees, and have the workers handle the logs only after they have confirmed that sliding of trees has been stopped.

(Prohibition of Work in Bad Weather)

Article 483 When dangers are expected in carrying out the work of afforestation, etc., due to bad weather conditions such as strong wind, heavy rain, heavy

snow, the employer must not have workers engage in the work.

(Wearing of Safety Helmets)

Article 484 (1) When carrying out the work of afforestation, etc., the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Section 2 Log Conveying by Wooden Sleigh and Snow Sledge

(Path of Wooden Sleighs)

Article 485 As regards the paths of wooden sleighs used in log conveying work (hereinafter referred to as "paths of wooden sleighs"), the employer must conform with the requirements set forth in the following items; provided, however, this does not apply to the paths for incline type wooden sleighs:

- (i) to ensure that the longitudinal gradient of the wooden sleigh path is one half or less (one third or less for the section of landing pier), and one tenth or less for the section 10 m immediately before the curved section with a radius of less than 5 m (excluding the curved sections after the second curved section when there are a series of curved sections at intervals of less than 10 m) excluding monorail paths or sleigh paths for wooden sleigh with effective braking devices and paths equipped with braking wire ropes;
- (ii) to ensure that the transversal gradient of the curved section is one fourth or less;
- (iii) to ensure that the width of the wooden sleigh path is larger than 30 cm or more added to the width of the wooden sleigh platform, and for the section where the radius of the curvature is less than 5 m, the width of the path is larger than the width that added one fifth of the length of the wooden sleigh to the width of the wooden sleigh platform to which 30 cm was added.
- (iv) to maintain treads of the wooden sleigh path in a condition that does not have a risk of endangering the workers due to stumbling, stepping on a sliver, etc.;
- (v) for the parts where there is a risk of dangers due to obstacles such as rocks and stumps lying along the outer curvature of the treads, to remove the obstacles or level the ground;
- (vi) to set up warning signs readily visible to the workers at the point of 10 m immediately before the sections where the longitudinal gradients are one eighth or more, the visibility is less than 30 m, the cross sections and any other points where there is a risk of dangers in traveling the wooden sleighs;
- (vii) to ensure that the landing piers have a solid structure and take measures

to prevent dangers due to stepping out such as providing joined planks and supplementary joined boards; and
(viii) to provide wooden guardrails of 5 cm or more in height at the outer curvature of the path with the curvature radius of less than 5 m and the landing pier excluding monorail paths for wooden sleighs.

Article 486 (1) When sections of the paths of wooden sleighs (excluding paths of monorail wooden sleighs, incline type wooden sleighs and other wooden sleighs equipped with effective braking device) extend 10 m or more of which the longitudinal gradient is one-eighth or more, the employer must provide braking wire ropes, and have workers use the wire ropes.
(2) The worker engaging in the log conveying work at the paths of wooden sleigh set forth in the preceding paragraph must use the braking wire rope set forth in the same paragraph.

Article 487 (1) The braking wire ropes set forth in paragraph (1) of the preceding Article must be free of marked wear, corrosion, cuts or other defects, and must have a diameter of 6 mm or more when the longitudinal gradient of paths of wooden sleighs is one-third or less, and 9 mm or more when the gradient is more than one-third.
(2) The employer must make sure to fasten the wire ropes set forth in the preceding paragraph securely to solid stationary objects such as standing trees, stakes, stumps, etc.

(Loading Cargo on Wooden Sleights)

Article 488 When loading cargo on a wooden sleigh, the employe must fix the cargo securely with such tools as clamps and ropes, and make the height of the cargo equivalent to or less than four times the width at the center of the wooden sleigh, excluding incline type wooden sleighs.

(Wooden Sleigh Work)

Article 489 (1) When carrying out the work of pulling a loaded wooden sleigh, the employer must have the worker engaging in the work carry out the following matters; provided, however, that this does not apply to level sections of paths of wooden sleighs, regarding item (i):
(i) to keep a distance of 30 m or more between wooden sleighs excluding monorail wooden sleighs and incline type wooden sleighs;
(ii) to make the length of a shoulder rope long enough not to get caught in wooden sleighs while pulling a wooden sleigh, and also at sections where the longitudinal gradient of paths of wooden sleighs is one-eighth or more, not to wear the rope across the shoulder, excluding the case where the rope easily

- comes off from wooden sleighs; and
- (iii) to exchange the braking wire ropes set forth in Article 486, paragraph (1) only after the worker has completely stopped the wooden sleigh.
- (2) The worker engaging in the work set forth in the preceding paragraph must carry out the matters listed in each item of the same paragraph.

(Inspection)

Article 490 (1) When carrying out the log conveying work using a wooden sleigh, the employer must inspect the following matters before commencing the work for the day:

- (i) condition of the paths of wooden sleighs;
 - (ii) when using paths of wooden sleighs equipped with the braking wire ropes set forth in Article 486, paragraph (1), the condition of the braking wire ropes; and
 - (iii) when using a wooden sleigh equipped with a braking device, the function of the braking device.
- (2) When carrying out the log conveying work by wooden sleigh using paths of wooden sleighs with landing piers that have not been used for one month or more, the employer must inspect in advance corrossions on the bents, girders, beams, stays and bracings of the piers, the condition of the fastening parts, connecting parts and mounting parts of the bents, etc., and the loosening of the bents.
- (3) When having found an abnormality in conducting the inspection set forth in the preceding two paragraphs, the employer must immediately make repairs.

(Paths of Snow Sledges)

Article 491 As regards paths of snow sledges in carrying out log conveying work using snow sledges (excluding snow sledges using cattle power and incline type snow sledges; the same applies hereinafter), (hereinafter referred to as "paths of snow sledges"), the employer must conform to the requirements of following items:

- (i) to have the longitudinal gradient of paths of snow sledges conform to the following requirements in accordance with the structure of the snow sledges:
 - (a) when using snow sledges that have a structure in which a part of the cargo touches the treads of snow sledges, the gradient of one fourth or less (for sections where the length of the straight section is less than 20 m, one third or less), and for sections 20 m immediately before a curved section of which the radius of curvature is less than 10 m (excluding the curved sections after the second curved section when curved section exists continuously at intervals of less than 20 m), the gradient of one-fifth;
 - (b) when using snow sledges that have a structure in which the cargo does

- not touch the treads of snow sledges, the gradient of one-fifth;
- (ii) as regards treads or outer circumferences of paths where there is risk of danger due to obstacles such as rocks and stumps, to remove the obstacles, or to level the ground;
 - (iii) to put up a warning sign in a manner that workers may easily become aware of them at locations 20 m immediately before sections of which the longitudinal gradient is one-tenth or more, sections where the visibility is less than 50 m in the paths of snow sledges, crossing with another path, bridges, and places where there is a risk of danger due to the operation of snow sledges; and
 - (iv) to take measures for reducing the speed of snow sledges, such as spreading soil, straw, chaff, etc., at sections where there is a risk of dangers due to overspeed of snow sledges.

Article 492 The employer must not use a snow sledges for log conveying work unless it is equipped with an effective braking device.

(Loading Logs into Snow Sledges)

Article 493 In carrying out the log conveying work, when loading logs into snow sledges, the employer must fix the logs securely with such tools as clamps and ropes, and make the height of the logs equivalent to or less than two and half times the width at the center of the snow sledge.

(Work of Traveling Snow Sledges)

- Article 494 (1) When carrying out the work of traveling a snow sledge loaded with cargo on paths of snow sledge, the employer must have the worker engaging in the work carry out the following matters; provided, however, this does not apply to the level sections of paths of snow sledges, regarding item (i):
- (i) to keep a distance of 50 m or more between snow sledges; and
 - (ii) in stopping a snow sledge, when there is a risk of a rear-end collision by the snow sledge behind, to promptly give a signal for stopping to the person who is running the snow sledge behind.
- (2) The worker engaging in the work set forth in the preceding paragraph must carry out the matters listed in each item of the same paragraph.

(Inspection)

Article 495 When carrying out the log conveying work by a snow sledge, the employer must inspect the condition of paths and the braking device of the snow sledge before commencing the work for the day, and immediately make repairs when having found any abnormality.

(Prohibition of Work in Bad Weather)

Article 496 When dangers in carrying out log conveying work by a wooden sleigh or snow sledge are expected due to bad weather conditions such as strong wind, heavy rain, heavy snow, the employer must not have workers engage in the work.

(Wearing of Safety Helmets)

Article 497 (1) When carrying out the log conveying work by wooden sleigh or snow sledge, the employer must have the workers engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Section 3 Skyline Logging Cable Crane and Logging Cableway

(Installation of Skyline Logging Cable Cranes)

Article 498 When seeking to install a skyline logging cable crane or a logging cableway, the employer must notify in advance the following matters to the operations chief of forestry cableway:

- (i) places where supports and the main equipment is installed;
- (ii) type and diameter of wire ropes to be used;
- (iii) central dangling ratio;
- (iv) maximum working load and the maximum loading capacity for each carrier; and
- (v) maximum traction force of the yarder of the skyline logging cable crane.

(Braking Devices)

Article 499 As regards a skyline logging cable crane or a logging cableway, the employer must conform to the requirements of the following items:

- (i) to provide an effective braking device for stopping carriers or lifted cargos as necessary except when there is no need to brake the carriers or stop the lifted cargos;
- (ii) to wind up the main cable, stay ropes and work ropes more than twice onto solid stationary objects such as supports, standing trees, stumps, etc., and fasten the ropes securely using clips, clamps or other fastening tools;
- (iii) to use two stays or more to stabilize the top of the supports, and make the angle formed by a stay and a support 30 degrees or more;
- (iv) to securely fasten saddle blocks, guide blocks, etc., using shackles, anchor ropes or other fittings that do not have a risk of breaking or coming off by the load applied to the mounting part;

- (v) to use carriers, main cable supporting devices and other accessories that have sufficient strength; and
- (vi) when fastening the end of the towing ropes or work ropes to a carrier or a loading block, to securely fasten with clips, eye splices or other methods.

(Safety Coefficient of Wire Ropes)

Article 500 (1) As regards the ropes for skyline logging cable cranes or logging cableways listed in the left column of the following Table, the employer must use wire ropes that have a safety coefficient equivalent to or more than that listed in the right column of the same Table in accordance with the use of the cables:

Intended Use of Wire Rope	Safety Coefficient
Main cable	2.7
Towing rope	4.0
Work rope (excluding hoisting rope)	4.0
Hoisting rope	6.0
Stay rope	4.0
Anchor rope	4.0
Cargo lifting rope	6.0

(2) The safety coefficient set forth in the preceding paragraph must be the value obtained by dividing the value of the breaking load of wire ropes by the value of maximum tension in accordance with the constructing condition of the skyline logging cable cranes or logging cableways and the load applied to the wire ropes.

(Prohibition of Using Inadequate Wire Ropes)

Article 501 As regards a wire rope for a skyline logging cable crane or a logging cableway, the employer must not use a wire rope falling under any of the following items:

- (i) those with one-tenth or more of the element wires cut in one strand;
- (ii) those with the reduction ratio of a diameter due to wear-out that exceeds 7% of the nominal diameter;
- (iii) those with kinks; and
- (iv) those with marked deformation or corrosion.

(Work Ropes)

Article 502 As regards the work ropes for skyline logging cable cranes (excluding endless cables), the employer must take the following measures:

- (i) the length of work ropes must be a length that enables to leave two or more windings around the drum of the yarder when the ropes are used at the

- maximum length; and
- (ii) the end of work ropes is to be securely fastened to the drum of the yarder with clamps, clips or other fastening tools.

(Prevention of Over Winding)

Article 503 As regards skyline logging cable cranes, in order to prevent over winding of hoisting ropes, the employer must take measures such as attaching a sign on the hoisting ropes and installing a signal device.

(Yarder or Cableway)

Article 504 As regards the yarder of skyline logging cable crane or the cableway of logging cableway, the employer must take the following measures:

- (i) to install the yarder or cableway so that it does not to float, slip out of place, or swing; and
- (ii) to provide a ratchet or brakes fitted with studs.

(Indication of Maximum Working Load)

Article 505 (1) As regards skyline logging cable cranes, the employer must indicate their maximum working load at a readily visible location, and make the value known to workers.

(2) As regards skyline logging cable cranes, the employer must not use the cranes by applying a load exceeding the maximum working load set forth in the preceding paragraph.

Article 506 (1) As regards logging cableways, the employer must indicate the following matters at a readily visible location, and make them known to workers:

- (i) the maximum working load;
- (ii) the distance between carriers; and
- (iii) the maximum loading capacity for each carrier.

(2) As regards logging cableways, the employer must not use the cableways by applying a load exceeding the maximum working load set forth in item (i) of the preceding paragraph and the maximum loading capacity for each carrier set forth in item (iii) of the same paragraph.

(Signals)

Article 507 When carrying out the forestry cableway work (meaning the work of constructing, dismantling, altering or repairing a skyline logging cable crane or a logging cableway, or yarding or log conveying by those devices; the same applies hereinafter), the employer must provide devices such as a telephone, or an electric bell, designate a person who uses each device and have the person

use the device, or set fixed signals, designate a person who gives the signals and have the person give the signals, in order to ensure communications between the operator of the crane or cableway and the worker hitching cargos.

(Prohibition of Entry)

Article 508 When carrying out the work of forestry cableway, the employer must not have workers enter the following places:

- (i) places below the main cable where there is a risk of endangering workers due to cargos falling or dropping; and
- (ii) places located within the interior angle of the work rope, where there is a risk of endangering workers due to loose ropes, guide blocks, etc. rebounding or coming flying.

(Restriction of Riding)

Article 509 (1) The employer must not have workers ride on the carrier, lifted cargo, plumb bob, etc. of a skyline logging cable crane or a logging cableway that are hung; provided, however, that this does not apply to the case where temporary work of inspecting repairing, etc., the equipment of a carrier, ropes, etc., are carried out and measures that do not have a risk of dangers due to falling are taken.

(2) A worker must not ride on the carriers, etc., that are hung set forth in the preceding paragraph, excluding the case set forth in the proviso of the same paragraph.

(Prohibition of Work in Bad Weather)

Article 510 When dangers in carrying out forestry cableway work are expected due to bad weather conditions such as strong wind, heavy rain, heavy snow, the employer must not have a worker engage in the work.

(Inspection)

Article 511 As regards a forestry cableway work, the employer must inspect the matters listed in the right column of the following Table in accordance with the cases listed in the left column of the same Table, and immediately make repairs or replacements when having found any abnormality.

Case Requiring Inspection	Matter to be Inspected
When constructing or altering work was carried out When test run was carried out	Condition of supports and anchors; Abnormality in yarders, cableways and brakes, and condition of installation of those machines;

	Abnormality in the main cable, towing rope, work rope, stay rope and anchor rope, and condition of installation of those ropes; Condition of the fastening portion between carriers or loading blocks and wire ropes; Abnormality in the device such as a telephone and an electric bell set forth in Article 507.
After bad weather conditions such as strong wind, heavy rain, heavy snow, and after an earthquake of medium shock or heavier	Condition of supports and anchors; Abnormality in yarders, cableways and brakes, and condition of installation of those machines; Condition of installation of main cable, towing rope, work rope, stay rope and anchor rope; Abnormality in the device such as a telephone and an electric bell set forth in Article 507.
Before commencing the work for the day	Function of braking device; Abnormality in cargo lifting ropes; Abnormality in the carriers of logging cableways and condition of the fastening portion between carriers and towing ropes; Function of the device such as a telephone and an electric bell set forth in Article 507.

(Prohibition of Leaving the Operating Station)

- Article 512 (1) The employer must not allow the operator of skyline logging cable cranes or logging cableways to leave the operating station during operation.
- (2) Operators set forth in the preceding paragraph must not leave the operating station during operation of skyline logging cable cranes or logging cableways.

(Appointment of an Operations Chief of Forestry Cableways)

Article 513 As regards the work set forth in Article 6, item (iii) of the Order, the employer must appoint an operations chief of forestry cableway from the persons who have obtained the license for operations chief of forestry cableway.

(Duties of the Operations Chief of Forestry Cableways)

Article 514 The employer must have the operations chief of forestry cableways carry out the following matters:

- (i) to decide the work method and placement of workers, and directly supervise the work;
- (ii) to check for defects in materials and function of instruments and tools, and remove those defective; and

(iii) to monitor the use of safety belts, etc., and safety helmets during work.

(Test of Safety Coefficient of the Main Cable)

Article 515 When having assembled a skyline logging cable crane or logging cableway or having made an alteration that causes changes in the tension of the main cable, the employer must conduct a test on the safety coefficient of the main cable, and perform a test run by applying the maximum working load.

(Wearing of Safety Helmets)

Article 516 (1) When carrying out the forestry cableway work, the employer have the workers engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

(2) The workers engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

(Exclusion from Application)

Article 517 The provisions of Article 500, paragraph (1) and Article 515 do not apply to the logging cableways with the maximum working load of less than 200 kg and the total of sloped distances of effective spans is less than 350 m.

Chapter VIII-2 Prevention of Dangers in Assembling Steel Frame of Buildings

(Work Plan)

Article 517-2 (1) When carrying out the work set forth in Article 6, item (xv)-2 of the Order, the employer must formulate in advance a work plan and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the following matters;

(i) the method and procedures of the work;

(ii) the method of preventing components from falling or structures composed of components from collapsing; and

(iii) the method of installing equipment for preventing the workers engaging in the work from dangers due to falling.

(3) When having formulated the work plan set forth in paragraph (1), the employer must inform the workers concerned of the matters set forth in each item of the preceding paragraph.

(Work of Assembling Steel Frame of Buildings)

Article 517-3 When carrying out the work set forth in Article 6, item (xv)-2 of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow; and
- (iii) when lifting or lowering materials, an instrument, a tool, etc., to have workers use lifting ropes, lifting bags, etc.

(Appointment of an Operations Chief of Assembly of Steel Frame of Buildings)
 Article 517-4 As regards the work set forth in Article 6, item (xv)-2 of the Order, the employer must appoint an operations chief of assembly of steel frame of buildings from the persons who have completed the skill training course for operations chief of assembly of steel frame of buildings.

(Duties of the Operations Chief of Assembly of Steel Frame of Buildings)
 Article 517-5 The employer must have the operations chief of assembly of steel frame of buildings carry out the following matters:

- (i) to decide the work method and placement of workers, and directly supervise the work;
- (ii) to inspect the function of instruments, tools, safety belt, etc., and safety helmets, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

Chapter VIII-3 Prevention of Dangers in Installing Steel Bridges

(Work Plan)

Article 517-6 (1) When carrying out the work set forth in Article 6, item (xv)-3 of the Order, the employer must formulate in advance a work plan and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the following matters:

- (i) the method and procedures of the work;
- (ii) the method for preventing components (including those composed of components) from falling or collapsing;
- (iii) the method of installing equipment for preventing the workers engaging in the work from dangers due to falling; and
- (iv) the type and capability of the machine, etc., to be used.

(3) When having formulated the work plan set forth in paragraph (1), the employer must make the matters set forth in each item of the preceding paragraph known to the workers concerned.

(Work of Installing Steel Bridges)

Article 517-7 When carrying out the work set forth in Article 6, item (xv)-3 of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow;
- (iii) to have workers use lifting ropes, lifting bags, etc., when lifting or lowering materials, equipment or tools, etc.; and
- (iv) when there is a risk of endangering workers due to components or equipment for installation falling or collapsing, to take measures such as installing stays and attaching reinforcing materials to prevent the buckling or deformation of the components and the equipment for installation.

(Appointment of an Operations Chief of Installation of Steel Bridges)

Article 517-8 As regards the work set forth in Article 6, item (xv)-3 of the Order, the employer must appoint an operations chief of installation of steel bridges from the persons who have completed the skill training course for operations chief installation of steel bridges.

(Duties of the Operations Chief of Installation of Steel Bridges)

Article 517-9 The employer must have the operations chief of installation of steel bridges carry out the following matters:

- (i) to decide the work method and placement of workers, and directly supervise the work;
- (ii) to inspect the function of instruments, tools, safety belts, etc., and safety helmets, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

(Wearing of Safety Helmets)

Article 517-10 (1) When carrying out the work set forth in Article 6, item (xv)-3 of the Order, the employer must have workers engaging in the work wear a safety helmet in order to prevent the workers from dangers due to objects that come flying or falling.

(2) The workers engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Chapter VIII-4 Prevention of Dangers in Assembling Wooden Buildings.

(Work of Assembling a Wooden Building)

Article 517-11 When carrying out the work set forth in Article 6, item (xv)-4 of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow; and
- (iii) to have workers use lifting ropes, lifting bags, etc., when lifting or lowering materials, equipment or tools, etc.

(Appointment of Operations Chief of Assembly of Wooden Buildings)

Article 517-12 As regards the work set forth in Article 6, item (xv)-4 of the Order, the employer must appoint an operations chief of assembly of wooden buildings from the persons who have completed the skill training course for operations chief of assembly of wooden buildings.

(Duties of the Operations Chief of Assembly of Wooden Buildings)

Article 517-13 The employer must have the operations chief of assembly of wooden buildings carry out the following matters:

- (i) to decide the method and procedures of the work, and directly supervise the work;
- (ii) to inspect the function of instruments, tools, safety belts, etc., and safety helmets, and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

Chapter VIII-5 Prevention of Dangers in Demolishing Concrete Structures

(Investigation and Work Plan)

Article 517-14 (1) When carrying out the work set forth in Article 6, item (xv)-5 of the Order, investigate in advance the shape of the structure, presence of cracks, and the surrounding environment, etc., and formulate a work plan that conforms with what became known by the investigation in order to prevent workers from dangers due to collapsing of the structure, flying and falling, etc., of objects, and carry out the work according to the work plan.

(2) The work plan set forth in the preceding paragraph must indicate the following matters:

- (i) the method and procedures of the work;
- (ii) the type and capability of the machine, etc., to be used; and
- (iii) the method of installation of stays, establishment of the prohibited entry area, and any other measures for preventing workers from dangers due to the collapse or falling of outer walls, posts, girders, etc.

(3) When having formulated the work plan set forth in paragraph (1), the employer must make the matters set forth in the item (i) and (iii) of the preceding paragraph known to the workers concerned.

(Work of Demolishing a Concrete Structure)

Article 517-15 When carrying out the work set forth in Article 6, item (xv)-5 of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow; and
- (iii) when lifting or lowering equipment, tools, etc., to have workers use lifting ropes, lifting bags, etc.

(Signal for Pulling Down Work)

Article 517-16 (1) When carrying out the work of pulling down outer walls, posts, etc., in carrying out the work set forth in Article 6, item (xv)-5 of the Order, the employer must set fixed signals for the pulling down work, and make them known to the workers concerned.

(2) In carrying out the pulling down work set forth in the preceding paragraph, when there is a risk of endangering workers other than those engaged in the pulling down work (hereinafter referred to as "other workers" in this Article), the employer must have the worker engaged in the pulling down work give the signals set forth in the same paragraph in advance, and must not start the work unless the worker has confirmed that the other workers have evacuated the area.

(3) The worker engaging in the pulling down work set forth in paragraph (1), when it is likely to cause dangers in the preceding paragraph, must give signals in advance, and not start the pulling down work unless having confirmed that the other workers have evacuated the area.

(Appointment of an Operations Chief of Demolition of Concrete Structures)

Article 517-17 As regards the work set forth in Article 6, item (xv)-5 of the Order, the employer must appoint an operations chief of demolition of concrete structures from the persons who have completed the skill training course for operations chief of demolition of concrete structures.

(Duties of the Operations Chief of Demolition of Concrete Structures)

Article 517-18 The employer must have the operations chief of demolition of concrete structures carry out the following matters:

- (i) to decide the work method and placement of workers, and directly supervise the work;
- (ii) to inspect the function of instruments, tools, safety belts, etc., and safety helmets and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

(Wearing of Safety Helmets)

Article 517-19 (1) when carrying out the work set forth in Article 6, item (xv)-5 of the Order, the employer must have the workers engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

- (2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Chapter VIII-6 Prevention of Dangers in Installing Concrete Bridges.

(Work Plan)

Article 517-20 (1) When carrying out the work set forth in Article 6, item (xvi) of the Order, the employer must formulate in advance a work plan and carry out the work according to the work plan.

- (2) The work plan set forth in the preceding paragraph must indicate the following matters:
 - (i) the method and procedures of the work;
 - (ii) the method for preventing components (including those composed of components) from falling or collapsing;
 - (iii) the method of installing equipment for preventing the worker engaging in the work from dangers due to falling; and
 - (iv) the type and capability of the machine, etc., to be used.
- (3) When having formulated the work plan set forth in paragraph (1), the employer must make the matters set forth in each item of the preceding paragraph known to the workers concerned.

(Work of Installing a Concrete Bridge)

Article 517-21 When carrying out the work set forth in Article 6, item (xvi) of the Order, the employer must take the following measures:

- (i) to prohibit workers other than those concerned from entering the area where the work is carried out;
- (ii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, and heavy snow;
- (iii) to have workers use lifting ropes, lifting bags, etc. when lifting and

- lowering materials, equipment and tools; and
- (iv) when there is a risk of endangering workers due to components or equipment for installation falling or collapsing, to take measures such as installing stays and attaching reinforcing materials to prevent the buckling or deformation of the components of the equipment for installation.

(Appointment of an Operations Chief of Installation of Concrete Bridges)

Article 517-22 As regards the work set forth in Article 6, item (xvi) of the Order, the employer must appoint an operations chief of installation of concrete bridges from the persons who have completed the skill training course for operations chief of installation of concrete bridges.

(Duties of the Operations Chief of Installation of Concrete Bridges)

Article 517-23 The employer must have the operations chief of installation of concrete bridges carry out the following matters:

- (i) to decide the work method and placement of workers, and directly supervise the work;
- (ii) to inspect the function of instruments, tools, safety belts, etc., and safety helmets and remove those defective; and
- (iii) to monitor the use of safety belts, etc., and safety helmets.

(Wearing of Safety Helmets)

Article 517-24 (1) When carrying out the work set forth in Article 6, item (xvi) of the Order, the employer must have the workers engaging in the work wear a safety helmet in order to prevent the workers from dangers due to objects that come flying or falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Chapter IX Prevention of Dangers Due to Falling, Objects that Come Flying, or Collapse

Section 1 Prevention of Dangers Due to Falling

(Installation of the Work Floor)

Article 518 (1) In carrying out a work at a place having a height of 2 m or higher (excluding the end, an opening, etc., of a work floor), when there is a risk of endangering workers due to falling, the employer must provide a work floor by installing scaffolding or by other methods.

(2) When it is difficult to provide a work floor pursuant to the provisions of the preceding paragraph, the employer must take measures such as setting a protective net or having workers use safety belts, etc., to prevent workers from

dangers due to falling.

Article 519 (1) The employer must provide enclosures, handrails, covers, etc., (hereinafter referred to as "enclosures, etc." in this Article), to places at the end or an opening of a work floor having a height of 2 m or higher that have the risk of endangering workers due to falling.

(2) When it is considerably difficult to provide enclosures, etc., pursuant to the provisions of the preceding paragraph, or when removing enclosures, etc., temporarily due to necessity for work, the employer must take measures such as setting a protective net or having workers use safety belts, etc., to prevent the workers from dangers due to falling.

Article 520 A worker, when having been instructed to use a safety belt, etc., in the case referred to in Article 518, paragraph (2), and paragraph (2) of the preceding Article, must use the safety belt, etc.

(Equipment for Fixing Safety Belts)

Article 521 (1) When carrying out the work at a place having a height of 2 m or higher, and having workers use safety belts, etc., the the employer must provide equipment, etc., for safely fixing safety belts, etc.

(2) When having workers use safety belts, etc., the employer must inspect the safety belts, etc., and equipment, etc., for fixing them as needed for existence of abnormality.

(Prohibition of Work in Bad Weather)

Article 522 When work is carried out at a place having a height of 2 m or higher, and when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain, heavy snow, the employer must not have workers engage in the work.

(Maintenance of Illumination)

Article 523 When carrying out work at a place having a height of 2 m or higher, the employer must maintain necessary illumination for safely in carrying out the work.

(Prevention of Dangers on a Roof Made of Slates)

Article 524 In carrying out work on a roof made of such materials as slate or wood wool boards, when there is a risk of endangering workers due to stepping through the roof, the employer must take measures such as providing foot boards having a width of 30 cm or wider and setting a protective net to prevent the workers from dangers due to stepping through the roof.

(Prevention of Dangers in Unused Vertical Shafts)

Article 525 (1) The employer must provide vertical shafts, wells, or inclined shafts with a slope of 40 degrees or more that are not in use with a blockade of the entrance or other measures to prevent the workers from dangers due to falling.

(2) The employer must provide unused tunnels or remains of mining with a railing, an enclosure or other facilities to cut off the passage.

(Installation of Facilities for Ascending and Descending)

Article 526 (1) When carrying out work at a place having a height or a depth exceeding 1.5 m, the employer must provide facilities that enable the worker engaging in the work to safely ascend and descend the workplace; provided, however, that this does not apply when providing facilities for safely ascending or descending is considerably difficult due to the nature of the work.

(2) The workers engaging in the work set forth in the preceding paragraph must use the facilities for safely ascending and descending when the facilities have been provided pursuant to the provisions of the main clause of the same paragraph.

(Movable Ladders)

Article 527 The employer must not use a movable ladder unless it conforms to the following requirements:

- (i) to have a strong structure;
- (ii) to be made of materials without marked damage, corrosion, etc.;
- (iii) to have the width of 30 cm or wider; and
- (iv) to fasten a non-slip device or to take other necessary measures to prevent displacement.

(Stepladders)

Article 528 The employer must not use a stepladder unless it conforms to the following requirements:

- (i) to have a strong structure;
- (ii) to be made of materials without marked damage, corrosion, etc.;
- (iii) to have the angle made by the foot and the floor of 75 degrees or less, and for folding stepladders, to be equipped with fittings, etc., to keep the angle made by the foot and the floor secure; and
- (iv) to be equipped with steps having an area sufficient for safe operation.

(Work of Assembling, Dismantling or Altering Buildings)

Article 529 In carrying out the work of assembling, dismantling or altering

buildings, bridges, scaffoldings, etc., (excluding work requiring the appointment of an operations chief), when there is a risk of endangering workers due to falling, the employer must take the following measures:

- (i) to appoint a person that supervises the work, and have the person directly supervise the work; and
- (ii) to inform the workers engaged in the work the method and procedures of the work in advance.

(Prohibition of Entry)

Article 530 The employer must not have workers other than those concerned enter the place where there is a risk of endangering workers due to falling.

(Prevention of Dangers when Transporting Workers by Vessel)

Article 531 When transporting workers to the workplace by vessel, the employer must take necessary measures to prevent workers from dangers due to the capsize or submergence of the vessel or the workers falling into the water, such as not boarding workers exceeding the maximum capacity of the vessel set pursuant to the Vessel Safety Act (Act No. 11 of 1933) and the provisions of the order based on the same Act and providing the vessel with life preservers or other lifesaving equipment.

(Lifesaving Equipment)

Article 532 In carrying out work on a log, a log boom, a raft, or boats on water using oars or paddles, etc., when there is a risk of workers engaging in the work drowning due to falling into the water, the employer must provide the place where the work is carried out with life preservers or other lifesaving equipment, arrange a small boat for lifesaving in the vicinity of the place, or take other necessary measures to save the workers' lives.

(Restriction of Work Inside a Hopper)

Article 532-2 The employer must not have workers work inside a hopper or a muck bin or other places where there is a risk of endangering workers due to workers being buried in soil and sand; provided, however, that this does not apply when measures such as having workers wear safety belts are taken to prevent the dangers.

(Prevention of Dangers Due to Falling into Boiling Basins)

Article 533 When there is a boiling basin, hopper, pit, etc., which has a risk of causing burns and suffocation on workers if they fall into it during work or when passing through it, the employer must provide a strong railing, etc., having a height of 75 cm or higher to the necessary parts in order to prevent

such dangers; provided, however, that this does not apply when measures to prevent workers from dangers of falling are taken, such as having workers use safety belts, etc.

Section 2 Prevention of Dangers Due to Objects that Come Flying or Collapse

(Prevention of Dangers Due to Collapse of Natural Ground)

Article 534 When there is a risk of endangering workers due to collapse of natural ground or falling of earth and rocks, the employer must take the following measures to prevent the dangers:

- (i) to make the gradient of the natural ground safe, remove earth and rocks that may fall, or provide a retaining wall, shoring, etc.; and
- (ii) to remove rainwater, underground water, etc., that may cause collapse of ground or fall of earth and rocks.

(Prevention of Dangers Due to Cave-ins)

Article 535 When there is a risk of endangering workers due to cave-ins, fall of rocks or collapse of sidewalls inside a tunnel, the employer must take measures such as providing shoring or removing loose stones to prevent the dangers.

(Prevention of Dangers Due to Throwing an Object from a High Place)

Article 536 (1) When throwing objects from a high place of 3 m or higher, the employer must take measures such as providing appropriate throwing facilities and placing a watcher to prevent the dangers to workers.

(2) A worker, when measures pursuant to the provisions of the preceding paragraph have not been taken, must not throw objects from a high place with a height of 3 m or higher.

(Prevention of Dangers Due to Objects Falling)

Article 537 When there is a risk of endangering workers due to objects for work falling, the employer must take measures such as providing protective nets or establishing a prohibited entry area to prevent the danger.

(Prevention of Dangers Due to Objects that Come Flying)

Article 538 When there is a risk of endangering workers due to objects that come flying, the employer must take measures such as providing facilities for preventing objects to come flying or have workers wear personal protective equipment, to prevent the dangers.

(Wearing of Safety Helmets)

Article 539 (1) In carrying out the work in the vicinity of a building berth, or at high-rise structure construction site, etc., where other workers are carrying out work at its upper part, the employer must have the worker engaging in the work wear a safety helmet in order to prevent workers from dangers due to objects that come flying or falling.

(2) The worker engaging in the work set forth in the preceding paragraph must wear the safety helmet set forth in the same paragraph.

Chapter X Passages and Scaffoldings

Section 1 Passages

(Passage)

Article 540 (1) The employer must provide places leading to a workshop and inside the workshop with safe passages for workers, and effectively maintain the passages at all times.

(2) The main passage of the passages prescribed in the preceding paragraph must have a sign indicating they are passages in order to maintain their effectiveness.

(Illumination for Passages)

Article 541 The employer must provide passages with measures of lighting or illumination to the extent that they do not hinder the normal passage of workers; provided, however, that this does not apply to tunnels, basements normally not used for passage, etc., when workers that pass through them are provided with an appropriate illumination tool.

(Indoor Passages)

Article 542 As regards indoor passages, the employer must conform to the following requirements:

- (i) to ensure sufficient widths in accordance with the purpose of use;
- (ii) to maintain the surface of the passage in a condition that does not cause dangers of stumbling, slipping, stepping through, etc.; and
- (iii) to not to place obstacles within a height of 1.8 m from the floor.

(Passage between Machines)

Article 543 As regards passages provided between machines or a machine and other facilities, the employer must provide a passage with the width of 80 cm or more.

(Floor Surface of a Workshop)

Article 544 The employer must ensure that the floor surface of a workshop is in

a condition that does not cause stumbling, slipping, etc., and maintain the floor surface in a safe condition.

(Footstools)

Article 545 When a lathe, a rolling mill or other machines are too high in comparison with the height of the workers engaged in the work pertaining to the machines, the employer must provide footstools that are safe and have an appropriate height.

(Workshop for Handling Dangerous Goods)

Article 546 (1) The employer must provide a workshop where dangerous goods or other explosive or ignitable substances are manufactured or handled, and the evacuation floor of a building having the workshop (meaning a floor having an entrance directly leading to the ground; the same applies hereinafter) with two or more entrances through which workers are able to easily escape to a safe place on the ground in an emergency.

(2) The door of the entrances set forth in the preceding paragraph must be a sliding door or a door that opens outward.

Article 547 (1) The employer must provide the floors other than the evacuation floor of a building having the workshop set forth in the preceding Article with two or more direct stairs or slope passages that lead to the evacuation floor or to the ground. In this case, one of the direct stairs or slope passages may be substituted by an evacuation tool such as a chute or an escape ladder.

(2) One of the direct stairs or slope passages set forth in the preceding paragraph must be provided outdoors; provided, however, that this does not apply when evacuation tools such as a chute, an escape ladder, or escape steps are provided.

Article 548 The employer must provide the workshop set forth in Article 546, paragraph (1) or an indoor workshop where 50 or more workers are regularly engaged in work with warning equipment such as automatic alarm equipment or emergency bells, or warning tools such as portable loud-speakers or manual sirens to promptly give a warning to workers in an emergency.

(Indication of Evacuation Exits)

Article 549 (1) The employer must provide indications to emergency exits, emergency passages or evacuation tools that are not used regularly showing that the exits, etc., are for emergency use, and maintain the exits, etc., in a readily accessible condition.

(2) The provisions of Article 546, paragraph (2) apply mutatis mutandis to the doors of the exits or passages set forth in the preceding paragraph.

(Railway Crossing with a Passage)

Article 550 When using vehicles on a rail track crossing with a passage, the employer must take appropriate measures such as placing a watcher or ringing an alarm bell.

(Passage between Vessel and Quay)

Article 551 (1) When workers pass between a vessel and a quay or between a vessel and another vessel mooring alongside the vessel, the employer must provide appropriate facilities for passage such as footboards or ladders; provided, however, that this does not apply when safe vessel-side stairs are provided.

(2) Workers must use the facilities for passage or the vessel-side stairs set forth in the preceding paragraph.

(Temporary Passages)

Article 552 The employer must not use temporary passages unless they conform to the following requirements:

(i) to have a sound structure;

(ii) to make the gradient 30 degrees or less; provided, however, that this does not apply to those that are equipped with stairs or those that are equipped with handrails with the height lower than 2 m;

(iii) for those having a gradient exceeding 15 degrees, to provide step pieces or other anti-slide devices;

(iv) to provide solid handrails with the height of 75 cm or higher at a place where there is a risk of workers falling; provided, however, in cases where it is unavoidable due to the nature of work, the handrails may be temporarily removed limited to necessary parts;

(v) for a temporary passage inside a vertical shaft having a length of 15 m or longer, to provide a landing at an interval of 10 m or less; and

(vi) for an ascending pier for construction work having a height of 8 m or higher, to provide a landing at an interval of 7 m or less.

(Shelter in Tunnels Equipped with Rail Tracks)

Article 553 (1) When workers pass through a tunnel, a bridge, etc., in which a rail tracks is laid, the employer must provide shelters at appropriate intervals; provided, however, that this does not apply when there is sufficient space on both sides of the rail tracks and there is no danger of coming into contact with vehicles traveling on the rail tracks.

(2) The provisions of the preceding paragraph do not apply to tunnels, etc., under construction.

(Measures for Monitoring Work on Rail Tracks)

Article 554 When carrying out the work on rail tracks or in the vicinity of rail tracks, an employer must provide a monitoring device or place a watcher to prevent the dangers of workers coming into contact with a vehicle traveling on the rail tracks.

(Maintenance of Illumination for Rail Track Maintenance Work)

Article 555 When carrying out the work of rail track maintenance, or work of exchanging, connecting or disconnecting vehicles traveling on rail tracks, the employer must maintain the illumination necessary to safely carry out the work.

(Ladder Paths)

Article 556 (1) The employer must not use ladder paths unless they conform to the following requirements:

- (i) to have a strong structure;
- (ii) to provide step pieces at equal intervals;
- (iii) to maintain appropriate space between a step piece and the wall;
- (iv) to take measures to prevent displacement of the ladder;
- (v) to have the top end of the ladder protrude from the floor by 60 cm or more;
- (vi) for a ladder path in a pit having a length of 10 m or more, to provide a landing platform at an interval of 5 m or less; and
- (vii) to make the gradient of a ladder path in a pit 80 degrees or less.

(2) The provisions of items (v) through (vii) of the preceding paragraph do not apply to ladder paths in a caisson, etc.

(Passages in a Pit)

Article 557 The employer must provide partition boards or other barriers for a passage or a ladder path installed in a pit where there is a danger of workers coming into contact with hoisting devices.

(Use of Safety Shoes)

Article 558 (1) The employer must determine an appropriate footwear such as safety shoes for workers in accordance with the structure of passages, etc., or the condition of the work, and have workers use the footwear.

(2) Workers set forth in the preceding paragraph, when having been instructed to wear footwear pursuant to the provisions of the same paragraph, must wear them.

Section 2 Scaffoldings

Subsection 1 Materials

(Materials)

Article 559 (1) As regards the materials of scaffoldings, the employer must not use those that have marked damage, deformation or corrosion.

(2) As regards the lumbers used for scaffoldings, the employer must not use them unless they are free from cracks, worm-eaten spots, knars, slant fibers or other defects that significantly affect the strength of the lumber, and whose bark is removed.

(Steel Pipes Used for Steel Pipe Scaffoldings)

Article 560 (1) As regards the steel pipes used for steel pipe scaffoldings, the employer must not use them unless they conform to the standards for steel pipes of the Japanese Industrial Standard A 8951, (Steel Pipe Scaffoldings) (hereinafter referred to as the "steel pipe standards"), or conform to the following requirements:

(i) the material is to have the tensile strength of 370 N/mm² or more and have the value of elongation listed in the right column of the following Table in accordance with the value of tensile strength listed in the left column of the same Table; and

Tensile Strength (Unit: N/mm ²)	Elongation (Unit: Percent)
370 or more and less than 390	25 or more
390 or more and less than 500	20 or more
500 or more	10 or more

(ii) the thickness is to be one thirty-first or more of the outer diameter.

(2) As regards the fittings used for steel pipe scaffoldings, the employer must not use them unless they conform to the standards for fittings of the Japanese Industrial Standard A 8951 (Steel Pipe Scaffoldings) or conform to the following requirements:

(i) materials (excluding those of the parts used for portions that may not be subject to shock) are to be rolled steels, forged steels or cast steels;

(ii) as regards couplings, when they are used to couple steel pipes at the center of fulcrums (meaning fulcrums having the maximum distance between them during work) and the maximum load during work is applied to them as concentrated load, the strain of the couplings is to be 1.5 times or less of that of steel pipes of the same type without couplings under the same condition; and

(iii) as regards clamps, when they are used to fasten steel pipes at a right angle and a load two times of the maximum operational load is applied onto the

fastened part, the slip is to be 10 mm or less.

(Structure)

Article 561 As regards scaffoldings, the employer must not use them unless they have a strong structure.

(Maximum Loading Capacity)

Article 562 (1) The employer must determine the maximum loading capacity of a work floor of scaffolding in accordance with its structure and materials, and must not apply a load exceeding the maximum loading capacity.

(2) As regards hanging scaffoldings (excluding hanging scaffoldings of gondolas; hereinafter the same applies in this Section), the maximum loading capacity of the work floor set forth in the preceding paragraph must be so determined as to ensure the safety coefficient of 10 or more for hanging wire ropes and hanging steel wires, the safety coefficient of 5 or more for hanging chains and hanging hooks, and the safety coefficient of hanging steel bands and of fulcrums at the bottom and top of the hanging scaffoldings of 2.5 for steels and 5 or more for logs.

(3) The employer must make the maximum loading capacity set forth in paragraph (1) known to workers.

(Work Floor)

Article 563 (1) The employer must provide a workplace on scaffolding (excluding single-row scaffolding) having a height of 2 m or higher with a work floor that conform to the following requirements:

(i) the floor materials to have the bending stress calculated in accordance with the distance between fulcrums and the load applied during work that does not exceed the value of allowable bending stress listed in the right column of the following Table in accordance with the type of lumber listed in the left column of the same Table;

Type of Lumber	Allowable Bending Stress (Unit: N/cm ²)
Japanese red pine, Japanese black pine, Japanese larch, hiba, hinoki, Japanese hemlock, Oregon pine, or Port Oxford cedar	1,320
Japanese cedar, fir, silver fir, abies, red cedar, or Western hemlock	1,030
Oak	1,910
Japanese chestnut, Japanese oak, Japanese beech or Keyaki	1,470
Plywood manufactured by gluing apitong or kapur with phenol resin	1,620

- (ii) the width to be of 40 cm or more and the clearance between floor boards to be of 3 cm or less, excluding hanging scaffoldings;
 - (iii) to provide places where there is a risk of endangering workers due to falling with handrails, etc., that conform to the following requirements; provided, however that this does not apply to the cases in which it is significantly difficult to provide the handrails, etc., due to the nature of the work, or in the cases the handrails, etc., are temporarily removed according to the needs of the work, and measures such as setting a protective net or providing workers with safety belts are taken to prevent the dangers to workers due to falling.
 - (a) to have a strong structure;
 - (b) to be made of materials without marked damage, corrosion, etc.;
 - (c) to have the height of 75 cm or more;
 - (iv) to use brackets, ledgers, girders, trestle or other supporting materials for the work floor having a strength sufficient to bear the load applied; and
 - (v) to fix the floor boards to two supports or more to prevent displacement or coming off, excluding hanging scaffoldings.
- (2) The provisions set forth in item (v) of the preceding paragraph do not apply when the boards fall under any of the following items:
- (i) when boards having a width of 20 cm or more, a thickness of 3.5 cm or more and a length of 3.6 m or more are used for the floor materials and are to be moved in accordance with the work, and when the following measures are taken:
 - (a) scaffolding boards are supported by three or more supports;
 - (b) the length of projection of scaffolding boards from the fulcrums is 10 cm or longer, and is one-eighteenth or less of the length of the scaffolding boards, excluding the cases where there is no risk of workers putting their foot on the projections;
 - (c) when scaffolding boards are to be piled in the longitudinal direction, they are to be piled on their fulcrum, and the length of the piled part is to be 20 cm or more; and
 - (ii) when boards having a width of 30 cm or more, a thickness of 6 cm or more and a length of 4 m or more are used, and the measures provided in (b) and (c) of the preceding item are taken.
- (3) A worker, in the case referred to in the proviso of paragraph (1), item (iii), when having been instructed to use safety belts, etc., must use them.

Subsection 2 Prevention of Dangers in Assembling of Scaffoldings

(Assembling of Scaffoldings)

Article 564 (1) When carrying out the work set forth in Article 6, item (xv) of the

Order, the employer must take the following measures:

- (i) to make the timing, scope and procedures of assembling, dismantling or altering known to the workers engaging in the work;
 - (ii) to prohibit workers other than those concerned from entering the area where assembling, dismantling or altering work is to be carried out;
 - (iii) to suspend the work when dangers due to bad weather conditions such as strong wind, heavy rain, or heavy snow is expected;
 - (iv) when carrying out the work of fastening, removing or handing over materials for scaffoldings, to provide scaffolding boards having a width of 20 cm or more, and take measures such as having workers use safety belts in order to prevent the danger to workers due to falling; and
 - (v) when lifting or lowering materials, equipment, tools, etc., to have workers use lifting ropes, lifting bags, etc.
- (2) The workers, in carrying out the work set forth in item (iv) of the preceding paragraph, when having been instructed to use safety belts, etc., must use them.

(Appointment of an Operations Chief of Assembling of Scaffolding)

Article 565 As regards the work set forth in Article 6, item (xv) of the Order, the employer must appoint an operations chief of assembling of scaffolding from those who have completed the skill training course for operations chief of assembling of scaffolding.

(Duties of the Operations Chief of Assembling of Scaffolding)

Article 566 The employer must have the operations chief of assembling of scaffolding carry out the following matters; provided, however, that the provisions of item (i) do not apply to the work of dismantling:

- (i) to check for defects in materials, and remove those defective;
- (ii) to inspect the function of instruments, tools, safety belts, etc., and safety helmets, and remove those defective;
- (iii) to decide the work method and the placement of workers, and supervise the progress of work; and
- (iv) to monitor the use of safety belts, etc., and safety helmets.

(Inspection)

Article 567 When carrying out the work on scaffoldings after bad weather conditions such as strong wind, heavy rain, heavy snow, a moderate or greater earthquake, or assembling, partially dismantling or altering scaffoldings, the employer must inspect the following matters before commencing the work, and when having found any abnormality, immediately make repairs:

- (i) condition of damage, mounting and placing of floor materials;

- (ii) condition of loosening at the fastening, connecting and mounting parts of standards, ledgers, brackets, etc.;
- (iii) condition of damage and corrosion of clamping materials and clamps;
- (iv) existence of removal and coming off of handrails, etc.;
- (v) condition of subsidence and sliding of leg parts;
- (vi) condition of mounting and existence of removal of diagonal bracings, stays, ties to wall and other reinforcement materials;
- (vii) existence of damage of standards, ledgers and brackets; and
- (viii) condition of the mounting part of projected girders and lifting cables, and the function of lifting devices.

(Inspection of Hanging Scaffolding)

Article 568 When carrying out the work on hanging scaffolding, the employer must inspect the matters listed in items (i) through (iv), item (vi) and (viii) of the preceding Article before commencing the work for the day, and when having found any abnormality, immediately make repairs.

Subsection 3 Log Scaffoldings

Article 569 (1) As regards log scaffoldings, the employer must not use them unless they conform to the following requirements:

- (i) to have the interval between standards 2.5 m or less, and provide the first ledger over the ground at a place having a height of 3 m or less;
- (ii) for the leg part of standards, to take measures such as embedding the foot of standards underground, providing bridge batten of foot posts, and using sills in order to prevent standards from sliding or settling;
- (iii) when the couplings of standards are lap joints, to band the joining parts at two locations or more with overlapping of 1 m or more; when the couplings of standards are butt joints, to construct the standards with two logs, or band the joining part at four locations or more with a splint having a length of 1.8 m or more;
- (iv) for the joining parts and crossing parts of standards, ledgers, brackets, etc., to be firmly bound with wires or other strong materials;
- (v) to reinforce log scaffoldings using diagonal bracing;
- (vi) for single row scaffolding, double row scaffolding or cantilever scaffolding, to provide ties to wall or stays that conform to the following requirements:
 - (a) the interval to be of 5.5 m or more in the vertical direction and 7.5 m or more in the horizontal direction;
 - (b) to make the scaffolding solid with steel pipes, logs, etc.; and
 - (c) when the scaffoldings are composed of tension components and compression components, the interval between these components are to be

within 1 m.

- (2) The provisions of item (i) of the preceding paragraph do not apply to the case where it is difficult to conform to the requirements of the provisions of the item due to the necessity of the work and the parts are reinforced with bent ledgers, two logs combined, etc.
- (3) The provisions of paragraph (1), item (vi) do not apply when ties to wall or stays are removed for the work of mounting of window frames and finishing of walls, or it is unavoidable due to necessity of the work, when taking measures in order to prevent the scaffoldings from collapsing, such as providing diagonal components to standards or ledgers in lieu of the ties to wall or stays.

Subsection 4 Steel Pipe Scaffoldings

(Steel Pipe Scaffoldings)

Article 570 (1) As regards steel pipe scaffoldings, the employer must not use them unless they conform to the following requirements:

- (i) for the leg part of the scaffoldings (excluding movable scaffoldings with casters), to take measures such as providing the bridge batten of foot posts with base fittings, and plankings, square timbers, etc., in order to prevent the scaffolding from sliding or subsiding;
- (ii) for movable scaffolding with casters, to take measures such as securely fixing the casters with a brake, or other brakes, pawl, etc. or fastening a part of the scaffolding to a solid building, in order to prevent scaffoldings from moving unexpectedly;
- (iii) to securely join or fasten the joining parts or crossing parts of steel pipes with suitable fittings;
- (iv) to reinforce the scaffolding with bracings;
- (v) for single row scaffolding, double row scaffolding or cantilever scaffolding, to provide ties to wall or stays that conform to the following requirement:
- (a) the interval to be the value equal to or less than those listed in the right column of the following Table in accordance with the type of steel pipe scaffolding listed in the left column of the same Table;

Type of Steel Pipe Scaffolding	Interval (Unit: m)	
	Vertical direction	Horizontal direction
Tube and coupler scaffolding	5	5.5
Prefabricated scaffolding (excluding those having height of less than 5 m)	9	8

- (b) to make the scaffolding strong with materials such as steel pipes and

- logs;
 - (c) when the scaffoldings are composed of tension components and compression components, the interval between these components are to be within 1 m; and
 - (vi) when a scaffolding is to be installed in the vicinity of an overhead power line, to take measures to prevent contact with the overhead power line such as moving the overhead power line or installing protecting equipment for insulating.
- (2) The provisions of paragraph (3) of the preceding Article apply mutatis mutandis to item (v) of the preceding paragraph. In this case, the term "paragraph (1), item (vi)" in paragraph (3) of the preceding Article is deemed to be replaced with " Article 570, paragraph (1), item (v)."

(Steel Pipe Scaffolding Conforming to the Steel Pipe Standards)

Article 571 (1) As regards the steel pipe scaffoldings composed of steel pipes that conform to the steel pipe standards, the employer must not use them unless they conform to the requirements set forth in the following items (i) through (iv) for single pipe scaffoldings and in items (v) through (vii) for prefabricated scaffoldings, in addition to the requirements set forth in paragraph (1) of the preceding Article:

- (i) the intervals of the standards are to be of 1.85 m or less in the direction of the crossbeam and 1.5 m or less in the direction of the beam;
 - (ii) to provide the first ledger above the ground at the height of 2 m or lower;
 - (iii) the standards exceeding 31 m measured from the highest point of the standards to consist of the combination of two steel pipes;
 - (iv) to limit the loading capacity between the standards to 400 kg;
 - (v) to provide the horizontal components at the top level and for each fifth level or less;
 - (vi) to take measures to prevent the beam frames and bracket frames from moving laterally with horizontal bracings; and
 - (vii) when the scaffolding has a height exceeding 20 m, and when the work involves carrying heavy materials, the main frame is to be the height of 2 m or less, and the interval is to be 1.85 m or less.
- (2) The provisions of item (i) or item (iv) of the preceding paragraph do not apply when it is difficult to comply with the provisions due to necessity of work and when the employer takes the measures prescribed in the following Article for the value of the maximum bending moment obtained by the calculation supposing that the components between each fulcrum as a simple beam structure.
- (3) The provisions of paragraph (1), item (ii) do not apply when it is difficult to comply with the provisions due to the necessity of work and when the parts are

reinforced with two steel pipes combined, etc.

(Steel Pipe Scaffolding Constructed by Steel Pipes Other Than Those
Conforming to the Steel Pipe Standards)

Article 572 As regards steel pipe scaffoldings composed of steel pipes other than those conforming to the steel pipe standards, the employer must not use them unless the value of the maximum bending moment between fulcrums calculated by supposing that interval between components as a simple beam structure does not exceed the value obtained by multiplying the section modulus of steel pipe with 1/1.5 of yield point of material of steel pipe (when the yield point is not known, 1/2 of the tensile strength) and coefficients listed in the right column of the following Table (when joints are used, 3/4 of the value of the factor) in accordance with the ratio of thickness to outer diameters listed in the left column of the same Table, in addition to conforming to the requirements set forth in Article 570, paragraph (1).

Ratio of Thickness to Outer Diameter of Steel Pipe	Coefficient
Thickness of 1/14 or more of outer diameter	1
Thickness of 1/20 or more and less than 1/14 of outer diameter	0.9
Thickness of 1/31 or more and less than 1/20 of outer diameter	0.8

(Distinction of Strength of Steel Pipes)

Article 573 (1) When using steel pipes with the same or similar outer diameter and thickness which differ in strength at the same workplace, in order to prevent dangers to workers due to confused use of the steel pipes, the employer must take measures to distinguish the strength such as coloring or affixing symbols, to the pipe surface, etc.

(2) The measure referred to in the preceding paragraph must not be the distinction by color only.

Subsection 5 Hanging Scaffoldings

(Hanging Scaffoldings)

Article 574 (1) As regards hanging scaffoldings, the employer must not use them unless they conform to the following requirements:

- (i) to not use hanging wire ropes falling under any of the following sub-items:
 - (a) those with 10% or more of element wires (excluding filler wires; hereinafter the same applies in this item) of which are cut in one strand of wire ropes;
 - (b) those with reduction ratio of a diameter exceeding 7% of the nominal diameter;

- (c) those with kinks;
 - (d) those with marked deformation or corrosion;
 - (ii) to not use hanging chains falling under any of the following sub-items:
 - (a) those with the elongation exceeding 5% of the original length at the time of manufacture;
 - (b) those with a reduction ratio of the diameter of links of the hanging chains exceeding 10% of the original diameter at the time of manufacture;
 - (c) those with cracks;
 - (iii) to not use hanging steel wires and hanging steel belts with marked damage, deformation or corrosion;
 - (iv) to not use hanging fiber ropes falling under any of the following sub-items:
 - (a) those with cut strands;
 - (b) those with marked damage or corrosion;
 - (v) to securely fasten one end of the hanging wire ropes, hanging chains, hanging steel wires, hanging steel belts or hanging fiber ropes to the scaffolding girder, stirrup, etc., and the other end to projected girders, anchor bolts, girders of building, etc.;
 - (vi) the work floor is to be with a width of 40 cm or more, and without clearance between the floor boards;
 - (vii) to fasten the floor materials to the scaffolding girder, stirrup, etc., in order to prevent them from being displaced or coming off;
 - (viii) to take measures in order to prevent movement or displacement such as providing stays to the scaffolding girders, stirrups, work floors, etc.; and
 - (ix) for shelf scaffoldings, to securely connect or fasten the joining parts and crossing parts of girders with steel wires, couplings or clamps.
- (2) The provisions of item (vi) of the preceding paragraph do not apply when measures are taken to prevent dangers to workers due to falling or falling of objects such as installing a net or a sheet under the work floor or sideways of the work floor.

(Prohibition of Work)

Article 575 The employer must not have workers use a stepladder, a ladder, etc., on hanging scaffolding.

Chapter XI Working Platforms

(Materials)

Article 575-2 (1) As regards materials used for the facilities composed of temporary supports, work platforms, etc., for the purpose of piling up materials or temporary equipment, or of installing or moving construction machines, etc., and having a height of 2 m or more (hereinafter referred to as "working

platforms"), the employer must not use those with marked damage, deformation or corrosion.

- (2) As regards the lumbers for working platforms, the employer must not use them unless they are free from cracks, worm-eaten spots, gnarls, slant fibers that are marked defects in terms of strength.
- (3) As regards steel materials for main parts of supports, work floors, girders, sleepers, etc. to be used for working platforms, the employer must not use them unless they conform to the Japanese Industrial Standard G 3101 (Rolled Steel for General Structure), Japanese Industrial Standard G 3106 (Rolled Steel for Welded Structure), Japanese Industrial Standard G 3191 (Hot Rolled Steel Bar), Japanese Industrial Standard G 3192 (Hot Rolled Steel Sections), Japanese Industrial Standard G 3444 (Carbon Steel Tubes for General Structural Purposes) or Japanese Industrial Standard G 3466 (Carbon Steel Square Pipes for General Structural Purposes), or have the strength and elongation equal to or superior to that prescribed in those Standards.

(Structure)

Article 575-3 As regards the working platforms, the employer must not use them unless they are of solid structure that do not have a risk of marked twist, strain, etc. being caused.

(Maximum Loading Capacity)

- Article 575-4 (1) The employer must determine the maximum loading capacity of the work floor in accordance with the structure and material of a working platform, and not place a load exceeding the maximum loading capacity.
- (2) The employer must make the maximum loading capacity set forth in the preceding paragraph known to workers.

(Assembly Drawing)

- Article 575-5 (1) When assembling a working platform, the employer must prepare an assembly drawing and build the working platform according to the assembly drawing.
- (2) The assembly drawing set forth in the preceding paragraph must indicate the layout and size of supports, work floors, girders, sleepers, etc.

(Measures to Be Taken for Working Platforms)

Article 575-6 As regards working platforms, the employer must conform to requirements set forth in the following items:

- (i) for the supports of the working platforms, to take measures such as embedding in accordance with the condition of the nature of the soil, etc., of the place where the working platform is to be installed, providing of bridge

battens of foot posts at the fixing part of the legs, using plankings, square timbers, etc., in order to prevent the working platform from sliding or subsiding;

- (ii) to securely fasten the fastening, connecting and mounting parts of supports, girders, diagonal bracings, etc., with clamps, etc., in order to prevent their displacement, coming off, etc.;
- (iii) the clearance between floor materials of work floors having the height of 2 m or more is to be 3 cm or less;
- (iv) to provide the ends of work floors having a height of 2 m or more, and where there is a of endangering workers due to falling with handrails, etc., that conform to the following requirements; provided, however, this does not apply when provision of handrails, etc., is considerably difficult due to the nature of the work, or when the handrails, etc., are temporarily removed due to the necessity of work, and measures in order to prevent the danger to workers due to falling such as setting a protective net and having workers use safety belts are taken:
 - (a) to have a solid structure;
 - (b) to be made of materials without marked damage, corrosion, etc.; and
 - (c) to have the height of 75 cm or higher.

(Assembling of the Working Platform)

Article 575-7 When carrying out the work of assembling, dismantling or altering a working platform, the employer must take the following measures:

- (i) to make the time, scope and procedures of assembling, dismantling or altering known to the worker engaging in the work;
- (ii) to prohibit workers other than those concerned from entering the area where the work of assembling, dismantling or altering is carried out;
- (iii) to suspend the work when dangers in carrying out the work are expected due to bad weather conditions such as strong wind, heavy rain or heavy snow; and
- (iv) when lifting or lowering materials, equipment, tools, etc., to have workers use lifting ropes, lifting bags, etc.

(Inspection)

Article 575-8 When carrying out the work on a working platform after bad weather conditions such as strong wind, heavy rain or heavy snow or a moderate or greater earthquake, or assembling, partially dismantling or altering a working platform, the employer must inspect the following matters before commencing the work, and immediately make repairs when having found any abnormality:

- (i) condition of sliding and subsidence of supports;

- (ii) existence of damage of supports, girders, etc.;
- (iii) condition of damage, mounting and placing of floor materials;
- (iv) condition of loosening at the fastening, connecting and mounting parts of supports, girders, diagonal bracings, etc.;
- (v) condition of damage and corrosion of clamping materials and clamps;
- (vi) condition of mounting of horizontal collar braces, diagonal bracings and other reinforcement materials and whether they have been removed; and
- (vii) whether handrails, etc. have been removed or come off.

Chapter XII Prevention of Dangers Due to Debris Flow

(Investigation and Record)

Article 575-9 In carrying out construction work (excluding temporary work; the same applies hereinafter) on a river where there is a risk of debris flow incidental to rain, melting snow or earthquake (hereinafter referred to as "river with a danger of debris flow"), the employer must investigate in advance the condition of upper reaches of the river from the workplace and the surrounding area in order to prevent workers from dangers due to debris flow, and record the result of the investigation.

(Rules Concerning Prevention of Industrial Accidents Due to Debris Flows)

- Article 575-10 (1) When carrying out construction work on the river with a danger of debris flows, the employer must establish in advance rules concerning the prevention of industrial accidents due to debris flows.
- (2) The rules set forth in the preceding paragraph must indicate the following matters:
- (i) the method of ascertaining the amount of rainfall;
 - (ii) the measures to be taken in the case rainfall, melting snow or an earthquake have taken place;
 - (iii) the measures to be taken in the case phenomena that precedes a debris flow have been noted;
 - (iv) the warning and the method of evacuation in the case a debris flow occurs; and
 - (v) details and timing of evacuation drills.
- (3) The employer must make the rules set forth in paragraph (1) suitable to what became known by the investigation pursuant to the provisions of the preceding Article.

(Ascertaining and Recording)

Article 575-11 When carrying out construction work on the river with a danger of debris flows, the employer must ascertain the amount of rainfall during the

preceding 24 hours before commencing work and the amount of rainfall for each hour after having commenced work using a rain gauge or other method and keep their record.

(Measures to be Taken When It Rains)

Article 575-12 In carrying out the construction work on the river with a danger of debris flows where there is a risk of a debris flow due to rainfall, the employer must take measures to become aware of the occurrence of a debris flow at an early stage, such as placing a watcher; provided, however, that this does not apply when promptly having suspended work and workers have been evacuated to a safe place.

(Evacuation)

Article 575-13 In carrying out the construction work on the river with a danger of debris flows where there is an imminent danger of an industrial accident due to a debris flow, the employer must immediately suspend the work and evacuate the workers to a safe place.

(Warning Equipment)

Article 575-14 (1) In carrying out the construction work on the river with a danger of debris flows, the employer must provide warning equipment such as a siren and an emergency bell, etc., to inform the workers concerned that debris flow has occurred, and make the location of the equipment known to them.

(2) The employer must maintain the warning equipment set forth in the preceding paragraph to properly function at all times.

(Evacuation Equipment)

Article 575-15 (1) In carrying out the construction work on the river with a danger of debris flows, the employer must provide equipment for evacuation such as ascending piers, ladders, etc., at appropriate places for the safe evacuation of workers when debris flow occurs, and make the location of the equipment and its using method known to the workers concerned.

(2) The employer must maintain the evacuation equipment set forth in the preceding paragraph to properly function at all times.

(Evacuation Drills)

Article 575-16 (1) In carrying out the construction work on the river with a danger of debris flows, the employer must conduct an evacuation drill for workers concerned after the commencement of the work without delay and once every period not exceeding six months thereafter in order to prepare for the

debris flow.

- (2) When having conducted the evacuation drill, the employer must record the following matters and preserve the records for three years:
- (i) the date of the training;
 - (ii) the name of the persons who have undergone the training; and
 - (iii) the details of the training.

Part III Health Standards

Chapter I Harmful Working Environment

(Removal of Causes of Harmfulness)

Article 576 In a workshop where harmful substances are handled, which is a harmful workplace where gas, vapor or dust is discharged, workers are exposed to harmful light or ultrasonic waves, noise or vibration is generated, or that is contaminated with pathogens, the employer must take necessary measures such as using substitutes and improving working methods or machine, etc., to eliminate the causes of those harmful situations.

(Controlling Discharge of Gas)

Article 577 The employer must take necessary measures such as making emission sources airtight and installation of a local exhaust ventilation or general ventilation system at an indoor workshop where gas, vapor, or dust is discharged in order to keep the concentration of gas, vapor or dust in the air in the indoor workshop below the harmful level.

(Prohibition of Use of an Internal Combustion Engine)

Article 578 The employer must not use machines using internal combustion engines in pits, well curbs, caissons, tanks, holds and other places where natural ventilation is insufficient; provided, however, that this does not apply when the places are ventilated to prevent health impairment caused by the exhaust gas of the internal combustion engine.

(Disposal of Exhaust Gas)

Article 579 As regards the local exhaust ventilation and other facilities which discharge exhaust gas containing harmful substance, the employer must install exhaust gas disposal device that uses methods such as absorption, combustion, dust collection and other effective methods in accordance with the type of the harmful substance.

(Disposal of Waste Fluid)

Article 580 As regards waste fluid containing harmful substance, the employer

must discharge them after processing the waste fluid by neutralization, precipitation, filtration, or other effective methods, in accordance with the type of the harmful substance.

(Disposal of Pathogens)

Article 581 As regards exhaust gas, waste fluids or other waste material contaminated with pathogens, the employer must discharge or dispose them after appropriate processing such as disinfecting or sterilization has been taken.

(Prevention of Scattering of Dust)

Article 582 The employer must sprinkle water or take other necessary measures to prevent dust from being scattered at outdoor workshops or in a pit where a great deal of dust is scattered.

(Standards of Concentration of Carbon Dioxide Gas in a Pit)

Article 583 The employer must ensure that the concentration of carbonic dioxide gas in the air is kept at 1.5% or less in workshop in pits; provided, however, that this does not apply to lifesaving or danger prevention work using air respirators, oxygen respirators, or hose masks.

(Indication of the Place Generating Noise)

Article 583-2 When having workers engage in work in an indoor workshop where intense noise is generated, the employer must take measures such as clearly indicating this with a sign so that the workers can easily know that the indoor workshop generates intense noise.

(Prevention of Noise Propagation)

Article 584 In an indoor workshop generating intense noise, the employer must take necessary measures of providing partition, etc., in order to prevent the noise from being propagated.

(Prohibition of Entry)

Article 585 (1) The employer must prohibit persons other than those concerned from entering the following places and must display a notice to that effect at a readily visible location:

- (i) places where a large quantity of high-temperature substances is handled or the temperature is extremely high;
- (ii) places where a large quantity of low-temperature substances is handled or the temperature is extremely low;
- (iii) places exposed to harmful light or ultrasonic waves;

- (iv) places where the concentration of the carbon dioxide gas exceeds 1.5%, or that of oxygen is less than 18%, or that of hydrogen sulfide exceeds 10 ppm;
 - (v) harmful places where gas, vapor or dust is discharged;
 - (vi) places where harmful substances are handled; and
 - (vii) places having a high risk of being contaminated with pathogens.
- (2) Workers must not enter the place where they are prohibited from entering pursuant to the provisions of the preceding paragraph without reason.

(Indication)

Article 586 The employer must ensure that harmful substances, pathogens or substances contaminated with them are accumulated at a fixed place and display a notice to that effect at a readily visible location.

(Workshop that Should Carry Out Working Environment Measurement)

Article 587 The indoor workshops having hot, cold or humid condition specified by the Order of the Ministry of Health, Labour and Welfare set forth in Article 21, item (ii) of the Order are as follows:

- (i) indoor workshops where the work of smelting or refining minerals or metals by blast furnaces, open-hearth furnaces, converters or electric furnaces, is carried out;
- (ii) indoor workshops where the work of melting ores, metals or glass by cupola, crucible, etc., is carried out;
- (iii) indoor workshops where the work of heating ores, metals or glass by annealing furnace, soaking furnace, quenching furnace, heating furnace, etc., is carried out;
- (iv) indoor workshops where the work of baking ceramic ware, bricks, etc., is carried out;
- (v) indoor workshops where the work of roasting or sintering ores is carried out;
- (vi) indoor workshops where the processing work of carrying, rolling, casting, hardening, or drawing heated metals is carried out;
- (vii) indoor workshops where the work of carrying, or casting molten metals is carried out;
- (viii) indoor workshops where the work of casting molten glass into glass products is carried out;
- (ix) indoor workshops where the work of vulcanizing rubber in a vulcanizing pan is carried out;
- (x) indoor workshops where the work of drying substances in a dryer chamber using a heat source is carried out;
- (xi) indoor workshops where the work of handling a large quantity of liquid air, dry ice, etc., is carried out;
- (xii) refrigerators, ice plants, ice storage facilities, freezing plants, etc., inside

- which workers carry out work;
- (xiii) indoor workshops where the work of dyeing using a dyeing bath, which uses a large quantity of vapor, is carried out;
 - (xiv) indoor workshops where the work of cleaning or plating metals or nonmetals by using a large quantity of vapor is carried out;
 - (xv) humidifying indoor workshops where the work of cotton-spinning or cotton-weaving is carried out; and
 - (xvi) beyond what is set forth in the preceding items, the indoor workshops specified by the Minister of Health, Labour and Welfare.

Article 588 The indoor workshops generating intense noise prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 21, item (iii) of the Order are as follows:

- (i) indoor workshops where the work of handling riveting machines, chipping machines, molding machines or other machines or tools that are driven by compressed air is carried out;
- (ii) indoor workshops where the work of rolling, drawing out, strain correcting or plate bending metals by rolling mills, etc., (excluding strain correction and plate bending by hydraulic press and drawing out by dies) is carried out;
- (iii) indoor workshops where the work of forging or casting metals by power-driven hammers is carried out;
- (iv) indoor workshops where the work of polishing or sand-washing metallic products by tumblers is carried out;
- (v) indoor workshops where the work of cleaning drums by chains or other tools driven by power is carried out;
- (vi) indoor workshops where the work of peeling off the bark of wood by drum barkers is carried out;
- (vii) indoor workshops where the work of chipping by chippers is carried out;
- (viii) indoor workshops where the work of manufacturing paper by a multi-cylinder paper manufacturing machine is carried out; and
- (ix) beyond what is set forth in the preceding items, the indoor workshops specified by the Minister of Health, Labour and Welfare.

Article 589 The workshops in pits prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 21, item (iv) of the Order are as follows:

- (i) workshops in pits where carbon dioxide gas stagnates or is liable to stagnate;
- (ii) workshops in pits where atmospheric temperature exceeds or is liable to exceed 28 degrees; and
- (iii) workshops in pits provided with ventilation facilities.

(Measurement of Noise Level)

- Article 590 (1) As regards an indoor workshop generating intense noise prescribed in Article 588, the employer must measure the equivalent sound level, periodically once every period not exceeding six months.
- (2) When having carried out the measurement pursuant to the provisions of the preceding paragraph, the employer must record the following matters for each measurement and preserve the record for three years:
- (i) the date of the measurement;
 - (ii) the method of the measurement;
 - (iii) the location where the measurement has been performed;
 - (iv) the conditions under which the measurement has been made;
 - (v) the results of the measurement;
 - (vi) the name of the person who has carried out the measurement; and
 - (vii) when improvement measures have been taken based on the results of the measurement, the outline of the measures.

- Article 591 (1) When having altered the plant or facilities or having changed the work processes or work methods in the indoor workshop generating intense noise prescribed in Article 588, the employer must measure the equivalent sound level without delay.
- (2) The provisions of paragraph (2) of the preceding Article apply mutatis mutandis to the case where the measurement pursuant to the provisions of the preceding paragraph has been carried out.

(Measurement of Concentration of Carbon Dioxide Gas in a Pit)

- Article 592 (1) As regards the workshop in a pit set forth in Article 589, item (i), the employer must measure the concentration of carbon dioxide gas, periodically once every period not exceeding month.
- (2) The provisions of Article 590, paragraph (2) apply mutatis mutandis when measurement pursuant to the provisions of the preceding paragraph has been carried out.

Chapter I-2 Work Pertaining to Incineration Facilities of Waste Material

(Measurement of Concentration and Content of Dioxins)

- Article 592-2 (1) As regards the workshop carrying out the work listed in Article 36, item (xxxiv) and item (xxxv), the employer must measure the concentration of dioxins (meaning dioxin etc., prescribed in Article 2, paragraph (1) of the Act on Special Measures against Dioxins (Act No. 105 of 1999); the same applies hereinafter) in the air of the workshop, periodically once every period not

exceeding six months.

- (2) When carrying out the work pertaining to the work listed in Article 36, item (xxxvi), the employer must measure the content of dioxins contained in the substances adhering to the inside of the equipment pertaining to the work before commencing the work.

(Removal of Adhering Substances)

Article 592-3 When carrying out the work pertaining to the dismantling, etc., prescribed in Article 36, item (xxxvi), the employer must carry out the work after the dioxins adhering to the inside of the equipment has been removed.

(Moistening of Scattering Source of Substances Containing Dioxins)

Article 592-4 When having workers engage in the work pertaining to the work listed in Article 36, item (xxxiv) and item (xxxvi), the employer must maintain the scattering source of substances containing dioxins in the workshop humid; provided, however, that this does not apply when maintaining humidity of the scattering source is considerably difficult.

(Personal Protective Equipment)

Article 592-5 (1) When having workers engage in the work pertaining to the work listed in Article 36, items (xxxiv) to (xxxvi), the employer must have workers engaging in the work use suitable personal protective equipment such as protective clothes, eye protector and respiratory protective equipment in accordance with the measurement result of concentration and content of dioxins pursuant to the provisions of Article 592-2, paragraph (1) and paragraph (2); provided, however, that this does not apply when the employer takes effective measures to prevent the scattering of substances containing dioxins such as the installation of facilities to keep the scattering source of substances containing dioxins airtight.

- (2) A worker, when having been instructed to use personal protective equipment pursuant to the provisions of preceding paragraph, must use the personal protective equipment.

(Operation Supervisor)

Article 592-6 When carrying out the work pertaining to the work listed in Article 36, items (xxxiv) through (xxxvi), the employer must appoint a supervisor for the work, and have the person supervise the work as well as inspect whether the measures set forth in the preceding three Articles have been taken in compliance with those provisions.

(Special Education)

Article 592-7 When having workers engage in the work listed in Article 36, items (xxxiv) through (xxxvi), the employer must conduct the special education for the workers on the following subjects:

- (i) harmful effect of dioxins;
- (ii) the method of work and the measures in cases of accidents;
- (iii) the inspection of the facilities at the time of commencement of work;
- (iv) the method of using personal protective equipment; and
- (v) beyond what is set forth in the preceding items, necessary matters for preventing the exposure to dioxins.

Chapter II Personal Protective Equipment

(Respiratory Protective Equipment)

Article 593 For the work in extremely hot or cold places, work handling a large quantity of high-temperature or low-temperature or harmful substances, work exposed to harmful light, work in places gas, vapor or dust is discharged, work that has a high risk of workers becoming contaminated with pathogens and other harmful work, the employer must provide suitable personal protective equipment such as protective clothes, eye protector and respiratory protective equipment in order to have workers engaging in the work use them.

(Personal Protective Equipment to Prevent Skin Disorder)

Article 594 In the work of handling substances harmful to skin or work in which harmful substances is liable to be absorbed through skin or penetrate into the body through the skin to cause poisoning or contagion, the employer must provide suitable personal protective equipment such as plasters, anti-penetration clothes, protective gloves or footgear, etc., in order to have workers engaging in the work use them.

(Personal Protective Equipment for Preventing Disorder from Noise)

Article 595 (1) In the work carried out at the place generating intense noise, the employer must provide earplugs or other personal protective equipment in order to have the worker engaging the work use them.

(2) When having instructed workers engaging in the work set forth in the preceding paragraph to use earplugs or other protective equipment, the employer must display a notice indicating that the protective equipment must be used in a readily visible place without delay, so that workers engaging in the work can easily understand that the equipment must be used.

(Quantity of Personal Protective Equipment)

Article 596 As regards the personal protective equipment prescribed in the

preceding three Articles, the employer must ensure that the number of pieces of protective equipment equal to or more than the number of the workers concerned is provided and maintained in a workable condition and clean at all times.

(Workers' Obligation to Use Personal Protective Equipment)

Article 597 The worker engaging in the work prescribed in Articles 593 through 595, when having been instructed to use personal protective equipment necessary for the work by the employer, must use the personal protective equipment.

(Personal Protective Equipment for Personal Use)

Article 598 When there is a danger of causing contagion of a disease to workers due to using personal protective equipment or tools, the employer must provide the workers with personal protective equipment or tools for their personal use or take measures to prevent the contagion of disease.

Article 599 Deleted

Chapter III Air Volume and Ventilation

(Air Volume)

Article 600 The employer must ensure that the air volume per worker at an indoor workshop where workers are regularly engaged in work is 10 m³ or more, excluding the capacity occupied by the facilities and the space that exceeds 4 m in height from the floor surface,.

(Ventilation)

Article 601 (1) In an indoor workshop where workers are regularly engaged in work, the employer must ensure that the total area for the part where the windows and other openings can be opened directly to the open air is one-twentieth or more of the floor area at all times; provided, however, that this does not apply when the indoor workshop is provided with facilities capable of providing sufficient ventilation.

(2) When the atmospheric temperature of the indoor workshop in the preceding Article is 10 degrees or lower, the employer must ensure that workers are not exposed to an air current of 1 m/sec or more in the process of ventilation.

(Ventilation System in a Pit)

Article 602 The employer must provide a workshop in a pit with a ventilation system in order to supply enough air to the workshop for health purposes;

provided, however, that this does not apply to the workshop where sufficient air for health purposes is supplied by natural ventilation.

(Measurement of Ventilation Volume in a Pit)

- Article 603 (1) As regards a workshop in a pit set forth in Article 589, item (iii), the employer must measure the ventilation volume in the workshop, periodically once every period not exceeding half a month.
- (2) The provisions of Article 590, paragraph (2) apply mutatis mutandis to the cases measurements pursuant to the provisions of the preceding paragraph have been carried out.

Chapter IV Lighting and Illumination

(Illuminance)

Article 604 The employer must conform illuminance on the working face of the place where workers are regularly engaged in work to the standards listed in the right column of the following Table in accordance with the type of work listed in the left column of the same Table; provided, however that this does not apply to workshops where photosensitive materials are handled, a workshop in a pit, and other workshops where special work is carried out.

Division of Work	Standards
Precision work	300 lucas or more
Ordinary work	150 lucas or more
Rough work	70 lucas or more

(Lighting and Illumination)

- Article 605 (1) The employer must ensure that lighting and illumination are provided in such a way that they do not create a striking contrast between light and dark and do not cause a glare.
- (2) The employer must inspect the illumination apparatus for the place where workers regularly engage in work, periodically once every period not exceeding six months.

Chapter V Temperature and Humidity

(Adjustment of Temperature and Humidity)

Article 606 As regards the indoor workshop having hot, cold or humid conditions and where there is a risk of being detrimental to health, the employer must take appropriate measures for adjusting the temperature and humidity such as cooling, heating, or ventilating the workshop.

(Measurement of Atmospheric Temperature and Humidity)

Article 607 (1) As regards an indoor workshop having hot, cold or humid conditions prescribed in Article 587, the employer must measure the atmospheric temperature, humidity and radiation heat in the indoor workshop (for radiation heat, limited to the indoor workshop set forth in items (i) through (viii) of the same Article), periodically once every period not exceeding half a month.

(2) The provisions of Article 591, paragraph (2) apply mutatis mutandis when measurements pursuant to the provisions of preceding paragraph have been carried out.

(Protection from Radiation Heat)

Article 608 When an indoor workshop has facilities such as a blast furnace which generate a great deal of heat, etc., the employer must discharge the heated air directly to the open air or take measures to protect workers from the radiated heat released.

(Repair of Heated Furnace)

Article 609 In repairing a furnace being heated, the employer must not allow workers to enter the furnace until it has been cooled off to a reasonable extent.

(Humidification)

Article 610 When performing humidification due to the nature of the work, the employer must perform the humidification within the extent that it is not harmful, and use clean water for atomizing.

(Atmospheric Temperature in a Pit)

Article 611 The employer must maintain the atmospheric temperature inside a pit 37 degrees or lower; provided, however, that this does not apply when having workers engage in lifesaving or danger prevention work by taking necessary measures to prevent health impairment due to high temperature.

(Measurement of Atmospheric Temperature in a Pit)

Article 612 (1) As regards a workshop in pit set forth in Article 589, item (ii), the employer must measure the atmospheric temperature in the workshop periodically once every period not exceeding half a month.

(2) The provisions of Article 590, paragraph (2) apply mutatis mutandis when measurements pursuant to the provisions of preceding paragraph have been carried out.

Chapter VI Rest

(Rest Facilities)

Article 613 The employer must endeavor to provide workers with rest facilities which they can effectively use.

(Rest Facilities in a Harmful Workshop)

Article 614 In workshops having extremely hot, cold or humid conditions, workshops where harmful gas, vapor or dust is discharged, or any other harmful workshops, the employer must provide rest facilities outside the harmful workshops; provided, however, that this does not apply to special workshops such as inside a pit, etc., and there are unavoidable reasons that the facilities cannot be provided.

(Chair for Standing Work)

Article 615 When workers continuously engaged in standing work have frequent chances to sit, the employer must provide them with chairs that can be used by the workers.

(Facilities for Sleeping or a Nap)

Article 616 (1) When it is necessary to give workers an opportunity to sleep at night or when there is an opportunity for workers to take a nap while working, the employer must provide them with suitable facilities for sleeping or taking a nap, separate for men and women.

(2) The employer must equip bedding and other necessary bedding equipment and take preventive measures against the spread of infectious diseases at the place set forth in the preceding paragraph.

(Measures Concerning Perspiring Work)

Article 617 In workshops where workers perspire a great deal, the employer must prepare salt and water that are to be provided to the workers.

(Resting Room)

Article 618 When regularly employing 50 workers or more, or 30 female workers or more, the employer must provide them with separate resting rooms or resting facilities for men and women.

Chapter VII Cleanliness

(Cleaning)

Article 619 The employer must take the measures listed in the following items:

- (i) in addition to daily cleaning, to carry out thorough cleaning periodically once every period not exceeding six months in a standardized manner;
- (ii) to implement investigation on locations, habitat and invasion routes of rodents, insects, etc., and damage caused by them periodically once every period not exceeding six months in a standardized manner, and take necessary measures to prevent infestation of rodents, insects, etc., based on the results of the investigation; and
- (iii) to use drugs or quasi-pharmaceutical products that are approved pursuant to the provisions of Article 14 or Article 19-2 of the Pharmaceutical Affairs Act (Act No. 145 of 1960) when using rodenticides or insecticides to control rodents, insects, etc.

(Workers' Obligation to Maintain Cleanliness)

Article 620 A worker must pay attention to the cleanliness of the workshops and not dump waste materials at places other than those provided for that purpose.

Article 621 Deleted

(Cleaning Contaminated Floors)

Article 622 The employer must clean floor and peripheral walls which are liable to become contaminated with harmful, perishable or stinking substances, as required.

(Structure of Floors)

Article 623 The employer must paint an impermeable material on the floors and peripheral walls of workshops set forth in the preceding Article and floors and peripheral walls liable to become wet by the use of a large quantity of water or other liquids, and ensure that they are structured in a way convenient for drainage.

(Disposal of Filth)

- Article 624 (1) The employer must dispose filth so that it will not be exposed, at places provided for that purpose.
- (2) The employer must disinfect floors, peripheral walls, containers, etc., liable to be contaminated with pathogens, as required.

(Cleaning Facilities)

Article 625 (1) When having workers engage in work that has a risk of contaminating the body or clothes, the employer must provide them with facilities for washing their eyes and bodies, or gargling, facilities for changing their clothes, or facilities for washing their clothes.

(2) The employer must provide the facilities set forth in the preceding paragraph with necessary tools respectively.

(Facilities to Dry Clothes)

Article 626 In workshops where clothes will become extremely wet, the employer must provide facilities to dry clothes.

(Supply of Water)

Article 627 (1) The employer must supply workers with a sufficient amount of drinking water or other drinks.

(2) When installing water supply facilities other than those prescribed in Article 3, paragraph (9) of the Waterworks Act (Act No. 177 of 1957) and supplying the water for drinking and washing tableware, the employer must comply with the following requirements:

- (i) to confirm that the water to be supplied complies with the water quality standards pursuant to the provisions of Article 4 of the Waterworks Act based on the result of the examination of water carried out by local government, etc.;
- (ii) to maintain the content of free residual chlorine at the water tap 0.1 ppm or more (in the case of combined residual chlorine, 0.4 ppm or more); provided, however, when the water to be supplied has a risk of becoming contaminated with pathogens or when it has a risk of containing a large quantity of organisms or substances suspected to be contaminated with pathogens, the content of free residual chlorine at the water tap be maintained at 0.2 ppm or more (in the case of combined residual chlorine, 1.5 ppm or more); and
- (iii) to take appropriate measures to prevent water from being contaminated by harmful substances or filthy water, etc.

(Lavatories)

Article 628 (1) The employer must install lavatories by conforming to the following requirements; provided, however, that this does not apply when a suitable number of lavatories or toilets are provided in special workshops such as inside a pit, etc. and there are unavoidable reasons that they cannot be provided:

- (i) to be provided separately for men and women;
- (ii) to provide one or more toilets for every 60 male workers or less working at the same time;
- (iii) to provide one or more urinals for every 30 male workers or less working at the same time;
- (iv) to provide one or more toilets for every 20 female workers or less working at the same time;

- (v) to construct receptacles for excrement in such a way that excrement will not penetrate into the soil; and
 - (vi) to provide washstands that supply a sufficient amount of clean water.
- (2) The employer must keep the lavatories, toilets, and urinals set forth in the preceding paragraph clean and dispose excrement in an appropriate manner.

Chapter VIII Dining Hall and Kitchen

(Dining Hall)

Article 629 In the workshops prescribed in the mail clause of Article 614, the employer must provide appropriate dining facilities outside the workshops; provided, however, that this does not apply when workers do not dine in the workplace.

(Dining Hall and Kitchen)

Article 630 As regards a dining hall and kitchen attached to the workplace, the employer must conform to the following requirements:

- (i) to provide a dining hall and kitchen separately, and the dining hall and kitchen are to have sufficient lighting and ventilation with a structure that is convenient for cleaning;
- (ii) to ensure that the floor area of the dining hall is 1 m² or more per worker when having a meal;
- (iii) to provide tables and chairs for workers eating at the dining hall (for chairs, excluding the cases where workers have a meal while sitting on the floor)
- (iv) to provide the dining hall at a suitable distance from a lavatory or dumping ground;
- (v) to provide facilities for disinfecting tableware, food ingredients, etc.;
- (vi) to provide suitable facilities to preserve tableware, food ingredients, and seasonings;
- (vii) to provide facilities to keep out flies and other insects, rats, dogs, cats, etc.;
- (viii) to provide a sufficient amount of clean water for drinking and cleaning;
- (ix) to ensure that the floor of the kitchen is made of impermeable materials and of a structure convenient for cleaning and drainage;
- (x) to ensure that filthy water and waste materials are disposed without being exposed outside the kitchen and discharged through a settling tank so as not to become harmful;
- (xi) to provide a rest room and lavatory exclusive for kitchen workers;
- (xii) to not have kitchen workers with an infectious disease who are inappropriate for cooking work;

- (xiii) to have kitchen workers wear clean work clothes exclusive for cooking;
- (xiv) to not allow persons other than kitchen workers enter the kitchen without reason; and
- (xv) to provide footwear exclusive for the kitchen and to not allow the workers to enter the kitchen with their shoes on.

(Securing and Improving Nourishment)

Article 631 When providing the workers with meals at the workplace, the employer must endeavor to take necessary measures in order to secure and improve the nourishment in providing the meals.

(Dietician)

Article 632 (1) When providing workers with 100 meals or more at a time or 250 meals or more a day at the workplace, the employer must endeavor to employ a dietician.

(2) The employer must ensure that the dietician carries out investigation or selection of food ingredients, preparation of menus, calculation of nutritive values, investigation of amounts wasted, preference survey of workers, guidance on nourishment, etc., in cooperation with the health supervisors and those who are concerned with providing the meals.

Chapter IX First Aid Supplies

(First Aid Supplies)

Article 633 (1) The employer must provide first aid supplies and other materials necessary for the treatment of an injured person, and inform the workers the place the supplies are kept and the method of using them.

(2) The employer must keep the first aid supplies and other materials set forth in the preceding paragraph clean at all times.

(Objects Contained in the First Aid Supplies)

Article 634 The employer must ensure that the first aid supplies and other materials set forth in paragraph (1) of the preceding Article contain the following items at a minimum:

- (i) medical dressing, tweezers and antiseptic solution;
- (ii) burn ointment for a workshop where workers handle materials of high temperatures and where workers are liable to get burned; and
- (iii) tourniquets, splints, stretchers, etc., for a workshop where workers are liable to sustain a serious injury.

Part IV Special Regulations

Chapter I Special Regulations Concerning Specified Principal Employers

(Places Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 29-2 of the Act)

Article 634-2 The places prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 29-2 of the Act are as follows:

- (i) places where there is danger of the soil, etc., to collapse (limited to places where there is a risk of endangering the workers of the contractor concerned);
- (i)-2 places where there is a danger of debris flow (limited to places on rivers where there is a risk of endangering the workers of the contractor concerned);
- (ii) places where there is a danger of machines, etc., to overturn (limited to places where there is a danger of the vehicle type construction machine used by the workers of the contractor concerned listed in the Appended Table 7, item (3) of the Order or a mobile crane to overturn);
- (iii) places in the vicinity of the charged circuit of overhead power lines and where there is a risk of workers getting an electric shock when the bodies of the workers come into contact with or come close to the charged circuit (limited to places where construction, demolition, inspection, repair and painting, etc., of structures or work associated with them is carried out by the workers of the contractor concerned or work using pile drivers, pile drawers or mobile cranes, etc., is carried out); and
- (iv) places where there is a danger of underground installations, etc., and buildings such as brick walls, concrete block walls and retaining walls to collapse (limited to places where the open-cut excavating work is carried out in the vicinity of the underground installations or structures by the workers of the contractor concerned).

(Establishment and Administration of Consultative Organizations)

Article 635 (1) As regards the establishment and administration of the consultative organization set forth in Article 30, paragraph (1), item (i) of the Act, the specified principal employer (meaning those set forth in Article 15, paragraph (1) of the Act; the same applies hereinafter) must comply with the following requirements:

- (i) to establish a consultative organization in which the specified principal employer and all related constructors participate; and
 - (ii) to periodically hold a meeting of the consultative organization.
- (2) The related contractors must participate in the consultative organization established by the specified principal employer pursuant to the provisions of the preceding paragraph.

(Liaison and Coordination Between Related Operations)

Article 636 As regards the liaison and coordination between related operations set forth in Article 30, paragraph (1), item (ii) of the Act, the specified principal employer must liaise and coordinate between the specified principal employer and the related contractors and between the related contractors, as necessary.

(Inspection Tours of the Workplace)

Article 637 (1) As regards the inspection tours pursuant to the provisions of Article 30, paragraph (1), item (iii) of the Act, the specified principal employer must carry out the tours at least once each working day.

(2) The related contractors must not refuse, disturb or evade an inspection tour carried out by the specified principal employer pursuant to the provisions of the preceding paragraph.

(Guidance and Assistance on Education)

Article 638 As regards the guidance and assistance on education set forth in Article 30, paragraph (1), item (iv) of the Act, the specified principal employer must take measures such as providing places of education and providing materials to be used for the education.

(Type of Business Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 30, Paragraph (1), Item (v) of the Act)

Article 638-2 The type of business prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 30, paragraph (1), item (v) of the Act is the construction industry.

(Formulation of a Plan)

Article 638-3 The specified principal employer prescribed in Article 30, paragraph (1), item (v) of the Act, as regards the formulation of a plan set forth in the same item, must formulate a plan concerning the process of the work including a process chart, etc., and a plan concerning the main machinery, equipment and the layout of temporary work buildings at the workplace.

(Guidance on Measures to Be Taken by the Contractor Concerned)

Article 638-4 The specified principal employer prescribed in Article 30, paragraph (1), item (v) of the Act, as regards the guidance on measures to be taken by the related contractors set forth in the same item, must comply with the following requirements:

(i) to instruct that the work plan to be established by the related contractor pursuant to the provisions of Article 155, paragraph (1) related to work using

vehicle type construction machine listed in each item of the Appended Table 7 of the Order (for machinery other than that listed in item (5) of the same Table, limited to a machine with the base machine weight of 3 tons or more) conforms to the plan set forth in Article 30, paragraph (1), item (v) of the Act; and

- (ii) to instruct that the matters listed in each item of Article 66-2, paragraph (1) of the Crane Ordinance established by the related contractor pursuant to the provision of the same paragraph related to the work using a mobile crane with a lifting capacity of 3 tons or more conform to the plan set forth in Article 30, paragraph (1), item (v) of the Act.

(Unification of Signals for Operating a Crane)

Article 639 (1) The specified principal employer, when workers of the specified principal employer and those of the related contractors carry out work at the same place using cranes, etc., (meaning cranes, mobile cranes, derricks, light capacity lifts and lifts for construction work to which the Crane Ordinance applies; the same applies hereinafter), must set unified signals concerning the operation of cranes, etc., and make them known to the related contractors.

- (2) When setting signals for operating a crane, etc., set forth in the preceding paragraph as regards the work to be carried out, the specified principal employer and the related contractors must set signals that are the same with those set in a unified manner pursuant to the provisions of the same paragraph.

(Unification of Signs at Accident Sites)

Article 640 (1) The specified principal employer, when workers of the specified principal employer and those of the related contractors carry out work at the same place and when the accident site, etc., listed in the following items exists at the place, must set unified signs that indicate the accident site, etc., and make them known to the related contractors:

- (i) the accident site where workers are prohibited from entering pursuant to the provisions of the main clause of Article 27, paragraph (2) of the Organic Solvent Ordinance.
- (ii) the working chamber set forth in Article 1, item (iii) of the High Pressure Work Ordinance and the air-lock chamber set forth in item (iv) of the same Article;
- (iii) the area set forth in Article 3, paragraph (1) of the Ionizing Radiation Ordinance, rooms set forth in Article 15, paragraph (1) of the Ionizing Radiation Ordinance, places workers are prohibited to enter pursuant to the provisions of the main clause of Article 18, paragraph (1) of the Ionizing Radiation Ordinance and areas set forth in Article 42, paragraph (1) of the Ionizing Radiation Ordinance; and

- (iv) the place with the oxygen deficiency danger set forth in Article 9, paragraph (1) of the Ordinance on Prevention of Anoxia (Order of the Ministry of Labour No. 42 of 1972; hereinafter referred to as "Anoxia Ordinance") or the place where workers must be evacuated pursuant to the provisions of Article 14, paragraph (1) of the Anoxia Ordinance.
- (2) The specified principal employer and the related contractors must clearly indicate the accident site, etc. listed in each item of the preceding paragraph pertaining to their work in the place by using signs that are the same with those set in a unified manner pursuant to the provisions of the same paragraph.
- (3) The specified principal employer and the related contractors must not allow workers other than those required to enter the accident site, etc. listed in each item of paragraph (1).

(Unification of Place Keeping Containers of Organic Solvents)

Article 641 (1) The specified principal employer, when workers of the specified principal employer and those of the related contractors carry out work at the same place and when the following containers are to be kept at the place (for the containers listed in item (ii), limited to cases where they are kept outdoors), must establish a unified place to keep the containers and make the place known to the related contractors:

- (i) containers of organic solvents (meaning those set forth in Article 1, paragraph (1), item (ii) of the Organic Solvent Ordinance; the same applies hereinafter); and
 - (ii) empty containers of organic solvents that has a risk of discharging vapor of the organic solvents.
- (2) The specified principal employer and the related contractors, when keeping the containers set forth in the preceding paragraph, must keep them at the place set in a unified manner pursuant to the provisions of the same paragraph (for containers listed in item (ii) of the same paragraph, limited to those to be kept outdoors).

(Unification of Warning)

Article 642 (1) The specified principal employer, when workers of the specified principal employer and those of the related contractors carry out work at the same place, must set unified warning to be used in the following cases and make it known to the related contractors:

- (i) when X-ray apparatus installed at the place (meaning those set forth in Article 6, item (v) of the Order; the same applies hereinafter) is charged with electricity;
- (ii) when the irradiation is made by an apparatus installed at the place loaded with radioactive substances prescribed in Article 2, paragraph (2) of the

Ionizing Radiation Ordinance;

- (iii) when blasting is to be carried out at the place;
 - (iv) when a fire breaks out at the place; and
 - (v) when a collapse of soil, flood or avalanche has occurred or is likely to occur.
- (2) The specified principal employer and the related contractors, when supplying electricity to X-ray apparatus, performing irradiation by the apparatus set forth in item (ii) of the preceding paragraph, or carrying out blasting work, must give the warning set in a unified manner pursuant to the provisions of the same paragraph. The same applies when having noticed a fire, collapse of soil, flood or avalanche has occurred or when they are likely to occur.
- (3) The specified principal employer and the related contractors, in the case referred to in paragraph (1), items (iii) through (v), when a warning is given pursuant to the provisions of the preceding paragraph, must evacuate the workers in the dangerous area other than those required to be there.

(Unification of the Implementation Method of Evacuation Drills)

- Article 642-2 (1) The specified principal employer must, in carrying out the construction work of tunnels, etc., when the workers of the specified principal employer and of related contractors work at the same place, as regards the evacuation drill, etc., conducted by the specified principal employer and related contractors pursuant to the provisions of Article 389-11, paragraph (1), set a unified timing and implementation method of the training and make them known to related contractors.
- (2) When conducting an evacuation drill, etc., the specified principal employer and the related contractors must carry out the drill according to the timing and implementation method set in a unified manner pursuant to the provisions of the preceding paragraph.
- (3) The specified principal employer must assist the related contractors by providing them with guidance and materials, etc., for an evacuation drill, etc., to be carried out by the related contractors.

Article 642-2-2 The provisions of the preceding Article apply mutatis mutandis to the place where the specified principal employer carries out construction work on a river that has a danger of debris flows. In this case, the term "the provisions of Article 389-11, paragraph (1)" in paragraph (1) of the same Article is deemed to be replaced with "the provisions of Article 575-16, paragraph (1) " and "evacuation drill, etc." in the provisions of the same paragraph through paragraph (3) of the same Article is deemed to be replaced with "evacuation drill."

(Provision of Materials for Dissemination)

Article 642-3 The specified principal employer who carries out the work belonging to the construction industry, when workers of the employer and the related contractors carry out the work at the same place, in order to assist the related contractors inform their workers who have newly engaged in the work at the place the site conditions (including conditions of the places that have a risk of endangering the workers; the same applies hereinafter) and the relations of the work carried out at the place, must take measures such as providing the venue, and providing materials to be used for the related contractors to inform their employees; provided, however that this does not apply when the specified principal employer themselves inform the workers of the related contractors the site conditions and relations of the work, etc.

(Designation of the Specified Principal Employer)

Article 643 (1) The designation pursuant to the provisions of Article 30, paragraph (2) of the Act is to be made for the following person with their prior consent:

- (i) the contractor who themselves carry out the work of the specified undertaking (meaning the specified undertaking set forth in Article 15, paragraph (1) of the Act) at a place set forth in Article 30, paragraph (2) of the Act and who contracts the main part of the construction work such as building frame construction (the earliest contractor in the case there are two or more contractors concerned due to the fact that the main part of the construction work consists of several contracts); and
- (ii) if there are two or more persons for the person set forth in the preceding item, the contractor elected by mutual vote.

(2) When it is not possible to designate a specified principal employer pursuant to the provisions of Article 30, paragraph (2) of the Act, the original orderer who must designate the specified principal employer pursuant to the same paragraph (original orderer set forth in the same paragraph) or the contractors must notify the fact to the Chief of the competent Labour Standards Inspection Office without delay.

(Liaison and Coordination between Related Operations)

Article 643-2 The provisions of Article 636 apply mutatis mutandis to the principal employer set forth in Article 30-2, paragraph (1) of the Act (hereinafter referred to as the "principal employer" from the following Article to Article 643-6). In this case, the term "Article 30, paragraph (1), item (ii)" in Article 636 is deemed to be replaced with "Article 30-2, paragraph (1)."

(Unification of Signals for Operating Cranes)

Article 643-3 (1) The provisions of Article 639, paragraph (1) apply mutatis

mutandis to the principal employer.

- (2) The provisions of Article 639, paragraph (2) apply mutatis mutandis to the principal employer and related contractors.

(Unification of Signs at an Accident Site)

Article 643-4 (1) The principal employer, when workers of the principal employer and those of the related contractors carry out the work at the same place and when the accident site listed in each of the following item exists in the place, must set unified signs indicating the accident site and make them known to the related contractors:

- (i) accident sites where workers are prohibited from entering pursuant to the provisions of the main clause of Article 27, paragraph (2) of the Organic Solvent Ordinance;
 - (ii) areas set forth in Article 3, paragraph (1) of the Ionizing Radiation Ordinance, rooms set forth in Article 15, paragraph (1) of the Ionizing Radiation Ordinance, places where entry of workers is prohibited pursuant to the provisions of the main clause of Article 18, paragraph (1) of the Ionizing Radiation Ordinance, or areas set forth in Article 42, paragraph (1) of the Ionizing Radiation Ordinance; and
 - (iii) oxygen-deficient places pursuant to the provisions of Article 9, paragraph (1) of the Anoxia Ordinance or places where workers must be evacuated pursuant to the provisions of Article 14, paragraph (1) of the Anoxia Ordinance.
- (2) The principal employer and related contractors must clearly indicate the accident site, etc., listed in each item of the preceding paragraph pertaining to the work carried out in the place by using the signs that are the same with those set in a unified manner pursuant to the provisions of the same paragraph.
- (3) The principal employer and related contractors must prohibit their workers other than those required to be there from entering the accident sites listed in each item of paragraph (1).

(Unification of Place to Keep Containers of Organic Solvents)

Article 643-5 (1) The provisions of Article 641, paragraph (1) apply mutatis mutandis to the principal employer.

- (2) The provisions of Article 641, paragraph (2) apply mutatis mutandis to the principal employer and the related contractors.

(Unification of Warning)

Article 643-6 (1) The principal employer, when workers of the principal employer and those of the related contractors carry out the work in the same place, must set unified warnings to be used in the following cases and make them known to

the related contractors:

- (i) when X-ray apparatus installed in the place is charged with electricity;
 - (ii) when irradiation is made by an apparatus which is loaded with radioactive substances prescribed in Article 2, paragraph (2) of the Ionizing Radiation Ordinance and installed in the place; and
 - (iii) when a fire has broken out in the place.
- (2) The principal employer and related contractors, when supplying electricity to X-ray apparatus or performing the irradiation with an apparatus set forth in item (ii) of the preceding paragraph at the place, must give the warning set in a unified manner pursuant to the provisions of the same paragraph. The same applies when the principal employer and related contractors have noticed that a fire has occurred or is likely to occur.
- (3) The principal employer and the related contractors, in the case listed in paragraph (1), item (iii), when a warning is given pursuant to the provisions of the preceding paragraph, must evacuate the workers at the dangerous area other than those required to be there.

(Designation of Principal Employer set forth in Article 30-2, Paragraph (1) of the Act)

Article 643-7 The provisions of Article 643 apply mutatis mutandis to the designation set forth in Article 30, paragraph (2) of the Act, which is applied mutatis mutandis pursuant to Article 30-2, paragraph (2) of the Act. In this case, the phrases "the place set forth in Article 30, paragraph (2)", "the work of specified undertaking (meaning the specified undertaking set forth in Article 15, paragraph (1) of the Act)" and "construction work such as building frame construction" in Article 643, paragraph (1), item (i) are deemed to be replaced with "the place set forth in Article 30, paragraph (2) of the Act which is applied mutatis mutandis pursuant to Article 30-2, paragraph (2) of the Act", "the work of undertaking prescribed in Article 30-2, paragraph (1) of the Act" and "the work", respectively; and the term "the specified principal employer" in paragraph (2) of the same Article is deemed to be replaced with "the principal employer."

(Designation of Principal Employer Set Forth in Article 30-3, Paragraph (1) of the Act)

Article 643-8 The provisions of Article 643 apply mutatis mutandis to the designation pursuant to the provisions of Article 30, paragraph (2) of the Act, which is applied mutatis mutandis pursuant to Article 30-3, paragraph (2) of the Act. In this case, the phrases "the place set forth in Article 30, paragraph (2)", "the work of specified undertaking (meaning the specified undertaking set forth in Article 15, paragraph (1) of the Act)", and "construction work such as

building frame construction" in Article 643, paragraph (1), item (i) are deemed to be replaced with "the place set forth in Article 30, paragraph (2) of the Act which is applied mutatis mutandis pursuant to Article 30-3, paragraph (2) of the Act", "the work prescribed in Article 25-2, paragraph (1) of the Act", and "excavation, etc., in tunneling work" respectively; and the term "the specified principal employer" in paragraph (2) of the same Article is deemed to be replaced with "the principal employer."

(Persons Responsible for Managing Technical Matters Relating to Rescue)

Article 643-9 (1) The provisions of Article 24-7 and Article 24-9 apply mutatis mutandis to persons responsible for managing technical matters related to rescue set forth in Article 25-2, paragraph (2) of the Act, which is applied mutatis mutandis pursuant to Article 30-3, paragraph (5) of the Act.

(2) A person who has the qualifications specified by the Order of the Ministry of Health, Labour and Welfare set forth in Article 25-2, paragraph (2) of the Act, which is applied mutatis mutandis pursuant to Article 30-3, paragraph (5) of the Act is to be the person prescribed in Article 24-8.

(Measures Concerning a Pile Driver and a Pile Drawer)

Article 644 The orderer set forth in Article 31, paragraph (1) of the Act (hereinafter referred to as the "orderer"), in the case set forth in the same paragraph, when having workers of the contractor (meaning those set forth in the same paragraph; hereinafter the same applies in this Chapter) use pile drivers or pile drawers, must conform the pile drivers or pile drawers to be used to the standards of pile drivers and pile drawers prescribed in Part II, Chapter II, Section 2 (limited to Article 172, Articles 174 through 176, Articles 178 through 181, and Article 183).

(Measures Concerning Railway Equipment)

Article 645 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use the railway equipment, the orderer must conform the railway equipment to be used to the standards of railway equipment prescribed in Part II, Chapter II, Section 3 (limited to Articles 196 through 204, Articles 207 through 209, Article 212, Article 213, and Articles 215 through 217).

(Measures Concerning a Concrete Form Shoring)

Article 646 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use concrete form shorings, the orderer must conform the concrete form shorings to the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of the

provision of Article 42 of the Act and with the standards of concrete form shorings prescribed in Part II, Chapter III (limited to Articles 237 through 239, Article 242, and Article 243).

(Measures Concerning Acetylene Welding Equipment)

Article 647 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use acetylene welding equipment, the orderer must take the following measures concerning the acetylene welding equipment:

- (i) to install the acetylene welding equipment in an acetylene gas generator room which complies with the standards of the acetylene gas generator room prescribed in Article 302, paragraph (2) and (3) and Article 303;
- (ii) to ensure that the acetylene welding equipment which generates or uses the acetylene gas of a pressure of 7 kPa or more, complies with the standards prescribed in Article 305, paragraph (1);
- (iii) to not use copper as regards the purifier and conduits of the acetylene welding equipment other than that set forth in the preceding item, for the part which has a risk of coming into contact with acetylene gas;
- (iv) to conform the acetylene gas generator and safety equipment to the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act; and
- (v) to conform the safety equipment to the standards prescribed in Article 306.

(Measures Concerning Alternating-Current Arc Welding Equipment)

Article 648 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use alternating-current arc welding equipment (excluding automatic welding equipment), the orderer must provide the alternating-current arc welding equipment with an automatic voltage reducing device which complies with the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act; provided, however, that this does not apply to the equipment used at places other than the following places:

- (i) the inside of a double-bottomed vessel or peak tank and other very confined places surrounded by electric conductors; and
- (ii) places with height of 2 m or more where there is a risk of endangering workers due to falling, or places where there is a risk of workers coming into contact with grounding materials with high conductivity of steel frame, etc.

(Measures Concerning Motor-Driven Appliances)

Article 649 (1) In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use machines or equipment

driven by motor (hereinafter referred to as "motor-driven appliance" in this Article) including movable and portable ones whose voltage to ground exceeds 150 V and movable and portable ones intended for use at places moistened with water or other liquids of high electric conduction or on materials of high electric conduction such as iron plates, steel frames and surface plates, the orderer must ensure that the motor-driven appliance is provided with an earth-leakage circuit breaker for preventing electric shocks having good sensitivity and the function to reliably work which complies with the rating of the electrical circuit.

- (2) The orderer set forth in the preceding paragraph, when it is difficult to take the measures prescribed in the same paragraph, must ensure that the metallic portion of the outer frame of the motor-driven appliance or the cover of the motor is grounded pursuant to the provisions of each item of Article 333, paragraph (2).

(Measures Concerning a Caisson)

Article 650 The orderer, in the case set forth in Article 31, paragraph (1) of the Act, when having workers of the contractor use a caisson, etc., and when the workers engage in the open-cut excavating work in the caisson, etc., must take the following measures concerning the caisson, etc.:

- (i) to install an air supply equipment when the depth of excavating exceeds 20 m; and
- (ii) beyond what is set forth in the preceding item, to ensure that the caisson complies with the standards of caisson, etc., prescribed in Part II, Chapter VI, Section 1, Subsection 3 (limited to Article 376, item (ii), and Article 377, paragraph (1), items (ii) and (iii)).

(Measures Concerning Tunnels)

Article 651 (1) The orderer, in the case set forth in Article 31, paragraph (1) of the Act, when having workers of the contractor use tunnels, etc., and when the workers are engaged in the construction work of tunnels, etc., (limited to cases where there is a risk of endangering workers due to cave-ins or falling of rocks), must take measures to prevent cave-ins or falling of rocks such as providing tunnel shoring and installing lock bolts to the tunnels, etc.

- (2) As regards the tunnel shoring set forth in the preceding paragraph, the orderer must ensure that the shoring complies with the standards of the tunnel shoring prescribed in Part II, Chapter VI, Section 2, Subsection 2 (limited to Article 390, Article 391, and Article 394).

(Measures Concerning Tunnel Concrete Form Shorings)

Article 652 In the case set forth in Article 31, paragraph (1) of the Act, when the

orderer has the workers of the contractor use tunnel concrete form shorings, the orderer must ensure that the tunnel concrete form shorings comply with the standards prescribed in Part II, Chapter VI, Section 2, Subsection 3.

(Measures Concerning a Hoistway)

Article 653 (1) In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has workers of the contractor use a work floor, a hoistway, pits or hatches of vessels, the orderer must install enclosures, handrails, covers, etc., at places with height of 2 m or more where there is a danger of workers falling; provided, however, that this does not apply when it is difficult to install enclosures, handrails, covers, etc., due to the nature of the work.

(2) In the case referred to in preceding paragraph, for the work floor located at a place exceeding 1.5 m in height or in depth, the orderer must install facilities for workers to safely ascend and descend the facilities.

(Measures Concerning a Temporary Passage)

Article 654 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has workers of the contractor use a temporary passage, the orderer must ensure that the temporary passage complies with the standards of temporary passages prescribed in Article 552.

(Measures Concerning Scaffoldings)

Article 655 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use scaffoldings, the orderer must take the following measures concerning the scaffoldings:

- (i) to set the maximum loading capacity of the work floor in accordance with the structure and material used, and to display the capacity at a readily visible place of the scaffolding;
- (ii) to inspect the following matters after bad weather conditions such as strong wind, heavy rain and heavy snow, or a moderate or greater earthquake, before commencing the work on the scaffoldings, and to promptly make repairs when there is risk of endangering workers:
 - (a) condition of damage, mounting and placing of floor materials;
 - (b) condition of loosening of the fastening, connecting and mounting parts of standards, ledgers, brackets, etc.;
 - (c) condition of damage and corrosion of clamping materials and clamps;
 - (d) existence of coming off of handrails, etc.;
 - (e) condition of settling and sliding of leg parts;
 - (f) condition of mounting of bracings, stays, ties to the wall and other reinforcement materials;
 - (g) damage of standards, ledgers and brackets; and

- (h) condition of the mounting part of projected girders and lifting cables and the function of lifting devices;
- (iii) beyond what is set forth in the preceding two items, to ensure that the scaffoldings comply with the standards specified by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act and the standards of scaffoldings prescribed in Part II, Chapter X, Section 2 (limited to Articles 559 through 561, Article 562, paragraph (2), Article 563, Articles 569 through 572, and Article 574).

(Measures Concerning a Work Platform)

Article 655-2 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use work platforms, the orderer must take the following measures concerning the work platforms used:

- (i) to set the maximum loading capacity of the work platform in accordance with the structure and material used and to display the capacity at a readily visible place of the work platform;
- (ii) to inspect the following matters after bad weather conditions such as strong wind, heavy rain and heavy snow, or a moderate or greater earthquake, before commencing the work on the work platform, and promptly make repairs when there is a risk of endangering workers:
 - (a) condition of sliding and subsidence of supports;
 - (b) condition of damage of supports, girders, etc.;
 - (c) condition of damage, mounting and placing of floor materials;
 - (d) condition of loosening of the fastening, connecting and mounting parts of supports, girders, diagonal bracings, etc.;
 - (e) condition of damage and corrosion of clamping materials and clamps;
 - (f) condition of mounting and removal of horizontal collar braces, diagonal bracings and other reinforcement materials; and
 - (g) whether the handrails, etc., have been removed or have come off;
- (iii) beyond what is set forth in the preceding two items, the work platform must comply with the standards of work platforms prescribed in Part II, Chapter XI (limited to Article 575-2, Article 575-3 and Article 575-6).

(Measures Concerning Cranes)

Article 656 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use a crane, etc., the orderer must ensure that the cranes, etc., comply with the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 37, paragraph (2) of the Act (limited to those pertaining to the structure of special machines, etc.) or the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act.

(Measures Concerning Gondolas)

Article 657 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use gondolas, the orderer must ensure that the gondolas comply with the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 37, paragraph (2) of the Act (limited to those pertaining to structure of special machines, etc.).

(Measures Concerning Local Exhaust Ventilation)

Article 658 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use local exhaust ventilation (limited to cases where the contractor is obligated to provide local exhaust ventilation pursuant to the provisions of Article 5 or Article 6, paragraph (2) of the Organic Solvent Ordinance and the provisions of Article 4 or the proviso of Article 27, paragraph (1) of the Dust Ordinance), the orderer must ensure that the functions of the local exhaust ventilation comply with the standards prescribed in Article 16 of the Organic Solvent Ordinance or Article 11 of the Dust Ordinance.

(Measures Concerning General Ventilation System)

Article 659 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use a general ventilation system (limited to cases where the contractor is obligated to install a general ventilation system pursuant to the provisions of Article 6, paragraph (1), Article 8, paragraph (2), Article 9, paragraph (1), Article 10 or Article 11 of the Organic Solvent Ordinance), the orderer must ensure that the functions of the general ventilation system comply with the standards prescribed in Article 17 of the Organic Solvent Ordinance.

(Measures Concerning the Facilities Used for Compressed Air Method)

Article 660 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use the facilities such as caisson method or other compressed air methods in which the inside pressure of the working chamber exceeds the atmospheric pressure, the orderer must ensure that the facilities comply with the standards prescribed in Articles 4 through 7-3 and Article 21, paragraph (2) of the High Pressure Work Ordinance.

(Measures Concerning X-ray Apparatus)

Article 661 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use X-ray apparatus set forth in

Article 13, paragraph (3), item (xxii) of the Order, the orderer must ensure that the X-ray apparatus complies with the standards provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act.

(Measures Concerning Gamma-Ray Radiation Equipment)

Article 662 In the case set forth in Article 31, paragraph (1) of the Act, when the orderer has the workers of the contractor use gamma-ray radiation equipment set forth in Article 13, paragraph (3), item (xxiii) of the Order, the orderer must ensure that the gamma-ray radiation equipment complies with the standards concerning gamma-ray radiation equipment provided by the Minister of Health, Labour and Welfare pursuant to the provisions of Article 42 of the Act.

(Group-2 Substance Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 9-3, Item (ii) of the Order)

Article 662-2 The substances prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 9-3, item (ii) of the Order are to be the specified class-2 substances prescribed in Article 2, item (iii) of the Specified Chemical Ordinance.

(Work Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 31-2 of the Act)

Article 662-3 The work prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 31-2 of the Act are to be the remodeling, repairing, cleaning, etc., of the facilities prescribed in the same Article, and for which workers carry out the work of disassembling the facilities or enter the inside of the facilities.

(Delivery of Documents)

Article 662-4 (1) The orderer set forth in Article 31-2 of the Act (limited to the orderer who place orders for work that is not contracted by a third party) must prepare a document stating the following matters (including an electronic or magnetic record (meaning a record created by an electronic system, magnetic system or other systems that cannot be recognized by human perception and used for information processing by computers; the same applies hereinafter) that is created in lieu of the document; hereinafter the same applies in the following paragraph), and deliver it to the contractor:

- (i) danger and harmful effect of the substances prescribed in Article 31-2 of the Act;
- (ii) matters concerning safety or health for which attention should be paid in the work;

- (iii) measures that have been taken to ensure safety or health for the work; and
 - (iv) emergency measures to be taken in the case of leakage of the substance or the occurrence of any other accidents.
- (2) The orderer set forth in the preceding paragraph (excluding those who place orders for work that is not contracted by a third party) must deliver a copy of the document provided pursuant to the provisions of the preceding paragraph or this paragraph to the contractor.
- (3) The delivery pursuant to the provisions of the preceding two paragraphs must be executed by the time a contractor commences the work prescribed in the preceding Article.

(Machine Prescribed by the Order of the Ministry of Health, Labour and Welfare Set Forth in Article 31-3, Paragraph (1) of the Act)

Article 662-5 The machine prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in paragraph (1) of Article 31-3 of the Act is to be as follows:

- (i) out of the vehicle type construction machines having the base machine weight of three tons or more, those listed in the Appended Table 7, item (2), 1, 2 or 4 of the Order;
- (ii) out of the vehicle type construction machines, those listed in the Appended Table 7, item (3), 1 through 3, or 6 of the Order; and
- (iii) mobile cranes with a lifting capacity of three tons or more.

(Measures Concerning Power Shovels)

Article 662-6 The orderer who themselves carry out the work pertaining to the specified work prescribed in Article 31-3, paragraph (1) of the Act or the person who has received a contract for all of the work from the orderer, and has subcontracted part of the work conducted at the place (hereinafter referred to as "the specified orderer, etc." in the following Article and Article 662-8), when carrying out the work pertaining to lifting a load using machinery set forth in item (i) of the preceding Article for the work, must carry out the necessary liaison and coordination between the specified orderer, etc., and contractors of the specified orderer who engage in operation of the machines, sling work, guiding or other work pertaining to the machine, and between the contractors, with relation to the work content, chain of command for the work and off-limits areas.

(Measures Concerning Pile Drivers)

Article 662-7 When carrying out the work using machines set forth in Article 662-5, item (ii) pertaining the work, the specified orderer must carry out the necessary liaison and coordination between the specified orderer, etc., and

contractors of the specified orderer who engage in operation of the machines, operation of working devices of the machines (excluding operations conducted at the operator's seat on the body), sling work, piling, connection of piles or augers, guiding or other work pertaining to the machines, and between the contractors, with relation to the work content, chain of command for the work and off-limits areas.

(Measures Concerning a Mobile Crane)

Article 662-8 When carrying out the work using machines set forth in Article 662-5, item (iii) pertaining to the work, the specified orderer must carry out the necessary liaison and coordination between the specified orderer, etc., and contractors of the specified orderer who engage in operation of the machines, sling work, signaling for operation or other work related to the machines, and between the contractors, with relation to the work content, chain of command for the work and off-limits areas.

(Obligations of Contractor Set Forth in Paragraph (3) of Article 32 of the Act)

Article 662-9 The contractor set forth in Article 32, paragraph (3) of the Act must cooperate in the necessary matters for training to be conducted by the principal employer or designated contractor who is obligated to take the measures pursuant to the provisions of Article 30-3, paragraph (1) or (4) of the Act, related to rescue of workers.

(Obligations of Contractors Set Forth in Article 32, Paragraph (4) of the Act)

Article 663 (1) The contractor set forth in paragraph (4) of Article 32 of the Act, when they have become aware that the measures prescribed in Articles 644 through 662 have not been taken, must promptly notify the orderer to that effect.

(2) The contractor set forth in paragraph (4) of Article 32 of the Act must not refuse, hinder, or evade the inspection, repairs, or other measures to be taken by the orderer in order to carry out the measures prescribed in Articles 644 through 662.

(Obligations of a Contractor Set Forth in Article 32, Paragraph (5) of the Act)

Article 663-2 The contractor set forth in Article 32, paragraph (5) of the Act, when they have become aware that the measures prescribed in Article 662-4, paragraph (1) or (2) have not been taken, must promptly notify the orderer to that effect.

(Reporting)

Article 664 (1) The specified principal employer (excluding those that have been

designated pursuant to the provision of Article 30, paragraph (2) or (3) of the Act), when workers of the specified principal employer and those of the related contractors work at the same place, must report the following matters to the Chief of the competent Labour Standards Inspection Office without delay, after the commencement of the work:

- (i) type of business and the name and location of the workplace;
 - (ii) type of business of the related contractors and the names and locations of their workplaces;
 - (iii) when it is required to appoint an overall safety and health controller pursuant to the provisions of Article 15 of the Act, that fact and the name of the overall safety and health controller;
 - (iv) when it is required to appoint a principal safety and health supervisor pursuant to the provisions of Article 15-2 of the Act; that fact and the name of the principal safety and health supervisor; and
 - (v) when it is required to appoint a site safety and health supervisor pursuant to the provisions of Article 15-3 of the Act, that fact and the name of the site safety and health supervisor (the name of the person who carries out the duties of the overall safety and health controller and the name of the person who carries out the duties of the principal safety and health supervisor for the employer set forth in Article 18-6, paragraph (2)).
- (2) The provisions of the preceding paragraph apply mutatis mutandis to the employer designated pursuant to the provisions of Article 30, paragraph (2) of the Act. In this case, the term "after the commencement of the work" is deemed to be replaced with "after the designation."

Chapter II Special Regulations Concerning Lessor of Machines

(Lessor of Machines)

Article 665 A person prescribed by the Order of the Ministry of Health, Labour and Welfare set forth in Article 33, paragraph (1) of the Act is to be the person who leases machines, etc., listed in each item of Article 10 of the Order to other employers on a regular basis by receiving a reasonable compensation.

(Measures to Be Taken by Lessor of Machines)

Article 666 (1) A person prescribed in the preceding Article (hereinafter referred to as "lessor of machine, etc."), when they lease machines, etc., must take the following measures:

- (i) to inspect the machine, etc., in advance and make repairs or carry out other necessary maintenance when having found any abnormality;
- (ii) to deliver the document stating the following matters to the employers to whom machines, etc., are leased:

- (a) the capability of the machines, etc.; and
 - (b) the characteristic of the machines, etc., and other matters attention should be paid in using the machines, etc..
- (2) The provisions of the preceding paragraph do not apply to cases where the selection of the machines, etc., at the time of their purchase and their maintenance service after the lease which should be made by the owner are made by the employer to whom the machines, etc., are leased (including equipment leasing program conducted by prefectural equipment leasing agencies prescribed in Article 2, paragraph (6) of the Act of Financial Aid on Facility Introduction for Small Scale Enterprises (Act No. 115 of 1956)).

(Measures to be Taken by Those to whom Machines are Leased)

Article 667 A person to whom machines, etc., are leased from lessors of machines, etc., must take the following measures when a person operates the machines, etc., is not employed by that person:

- (i) to confirm that the operator of the machines, etc., has the qualification or skill required for the operation pursuant to laws and regulations;
- (ii) to notify the operator of the machines, etc., the following matters:
 - (a) details of the work,
 - (b) chain of command;
 - (c) method of liaison and signals;
 - (d) traveling routes, speed limit and other matters concerning the operation of the machines, etc.; and
 - (e) other necessary matters for preventing industrial accidents due to the operation of the machines, etc.

(Obligations of the Person Operating the Machines)

Article 668 The person operating the machine, etc. set forth in the preceding Article, when having been notified the matters listed in item (ii) of the same Article from the person to whom machines, etc., are leased, must observe the matters.

Article 669 Deleted

Chapter III Special Regulations Concerning Lessor of Buildings

(Emergency Exits for Common Use)

Article 670 (1) The lessor of buildings set forth in Article 34 of the Act (hereinafter referred to as "lessor of buildings"), as regards the emergency exits or passages of the building, or chutes, escape ladder and other equipment for evacuation, etc., for the common use by two or more businesses to which the

building is leased, must indicate that the exits, etc., are for emergency use, and maintain them in a readily accessible condition.

- (2) The lessor of buildings must ensure that the emergency exits or passages set forth in the preceding paragraph are provided with sliding doors or doors that open outward.

(Warning Facilities for Common Use)

Article 671 The lessor of a building, when the employer to whom the building is leased manufactures or handles dangerous goods or other explosive or flammable substances, or when 50 or more workers of the employer to whom the building is leased work within the building, must provide the building with automatic warning facilities, emergency bells or other warning facilities, or portable loud-speakers, manual sirens or other warning tools to be used to promptly give warning to the workers in an emergency, and maintain them to properly function at all times.

(Effective Maintaining of Leased Buildings)

Article 672 The lessor of a building, when leasing a building to be used as a factory which is provided with any of the equipment listed in the following items and when two or more businesses to which the building is leased use a part of or the whole equipment in common, must take necessary measures such as inspection or repairs, in order to effectively maintain the function of part of the equipment commonly used:

- (i) local exhaust ventilation;
- (ii) push-pull type ventilation system;
- (iii) general ventilation system;
- (iv) exhaust gas treatment device; or
- (v) waste liquid treatment device.

(Water Supply Facilities of the Leased Building)

Article 673 The lessor of a building, when leasing a building to be used as a factory which is provided with facilities to supply water for drinking or washing tableware, must ensure that the facilities are the water supply facilities prescribed in Article 3, paragraph (9) of the Waterworks Act, or that the facilities supply water that complies with the water quality standards set forth in Article 4 of the same Act.

(Draining Facilities of the Leased Building)

Article 674 The lessor of a building, when leasing a building to be used as a factory which is provided with draining facilities, must ensure that repairs and other necessary measures are taken so as to prevent the leakage of filthy water

due to the the normal function of the draining facilities being hindered.

(Cleaning of Leased Buildings)

Article 675 The lessor of a building, when leasing a building to be used as a factory, must ensure that the measures listed in the following items are taken for cleaning and controlling rodents, insects, etc., based on consultations with employers to whom the building was leased, in order to maintain the cleanliness of the building:

- (i) in addition to daily cleaning, to conduct a thorough cleaning periodically once every period not exceeding six months in a standardized manner;
- (ii) to periodically conduct an investigation on locations, habitats and invasion routes of rodents, insects, etc., and damage caused by them periodically once every period not exceeding six months in a standardized manner, and take necessary measures to prevent infestation of rodents, insects, etc. based on the results of the investigation; and
- (iii) to use drugs or quasi-pharmaceutical products that are approved pursuant to the provisions of Article 14 or Article 19-2 of the Pharmaceutical Affairs Act when using rodenticides or insecticides to control the rodents, insects, etc.

(Provision of Convenience)

Article 676 The lessor of a building, as regards the installation of local exhaust ventilation, partitions for noise prevention and other necessary facilities for prevention of industrial accidents, when the employer to whom the building is leased requests the lessor to provide conveniences such as an approval to alter the building due to the installation of the facilities, or use of the facilities necessary for the work of installing the facilities, must provide the convenience to the employer.

(Lavatories of the Leased Building)

Article 677 The lessor of a building, as regards the lavatories of the building to be leased which are for common use by two or more businesses to which the building is leased, must ensure that the lavatories comply with the standards prescribed in each item of Article 628, paragraph (1). In this case, the number of urinals and toilets that should be provided in accordance with the number of workers is to be decided based on the total number of the workers of the businesses who commonly use the lavatories.

(Unification of Warning and Signs)

Article 678 (1) The lessor of a building must set unified warnings to be used in case of emergency such as the outbreak of a fire, the leakage of a toxic chemical substance in the leased building in a standardized manner, and make them

known to the employer to whom the building is leased.

- (2) In leasing a building to be used as a factory, when an accident site, etc., listed in Article 640, paragraph (1), item (i), item (iii) or item (iv) exists in the building, the lessor of the building must set unified signs indicating the accident site, etc., in a standardized manner and make them known to the employer to whom the building is leased.

Appended Table 1 (Re: Article 16 and 17)

Division of Work	Persons who Have the Qualification	Name
Work set forth in Article 6, item (i) of the Order	A person who has a license for operations chief of work in pressurized chambers	Operations chief of work in pressurized chamber
Work set forth in Article 6, item (ii) of the Order	A person who has a license for operations chief of gas welding work	Operations chief of gas welding work
Work set forth in Article 6, item (iii) of the Order	A person who has a license for operations chief of forestry cableway work	Operations chief of forestry cableway work
Out of the work set forth in Article 6, item (iv) of the Order, work handling boilers with a total heating surface area exceeding 500 m ² (excluding the case of handling only once-through boilers)	A person who has a special class boiler expert's license	Operations chief of boiler
Out of the work set forth in Article 6, item (iv) of the Order, work handling boilers with a total heating surface area of 25 m ² or more and 500 m ² or less (including the case of handling only once-through boilers with a total heating surface area exceeding 500 m ²)	A person who has a special class or class-1 boiler expert's license	
Of the works set forth in item (iv) of Article 6 of the Order, work handling boilers with a total heating surface area of less than 25 m ²	A person who has a special class, class-1 or class-2 boiler expert's license	

Out of the work set forth in Article 6, item (iv) of the Order, work handling only boilers listed in (a) through (d) of Article 20, item (v) of the Order	A person who has a special class, class-1 or class-2 boiler expert's license or a person who has completed the skill training course for operation of boilers	
Work set forth in Article 6, item (v) of the Order	A person who has a license for operations chief of radiography work with X-rays	Operations chief of radiography with X-rays
Work set forth in Article 6, item (v)-2 of the Order	A person who has a license for operations chief of radiography with gamma-rays	Operations chief of radiography with gamma-rays
Work set forth in Article 6, item (vi) of the Order	A person who has completed the skill training course for operations chief of woodwork processing machines	Operations chief of woodwork processing machine
Work set forth in Article 6, item (vii) of the Order	A person who has completed the skill training course for operations chief of press machines	Operations chief of press machines
Work set forth in Article 6, item (viii) of the Order	A person who has completed the skill training for operations chief of drying equipment	Operations chief of industrial dryer
Work set forth in Article 6, item (viii)-2 of the Order	A person who has completed the skill training course for operations chief of concrete crackers	Operations chief of concrete crackers
Work set forth in Article 6, item (ix) of the Order	A person who has completed the skill training course for operations chief of excavating natural ground and shoring	Operations chief of excavating natural ground and shoring
Work set forth in Article 6, item (x) of the Order	A person who has completed the skill training course for operations chief of shoring	Operations chief of shoring
Work set forth in Article 6, item (x)-2 of the Order	A person who has completed the skill training course for operations chief of excavating tunnels, etc.	Operations chief of excavating tunnels, etc.

Work set forth in Article 6, item (x)-3 of the Order	A person who has completed the skill training course for operations chief of lining tunnels, etc.	Operations chief of lining tunnels, etc.
Work set forth in Article 6, item (xi) of the Order	A person who has completed the skill training course for operations chief of excavating for quarrying	Operations chief of excavating for quarrying
Work set forth in Article 6, item (xii) of the Order	A person who has completed the skill training course for operations chief of cargo piling	Operations chief of cargo piling
Work set forth in Article 6, item (xiii) of the Order	A person who has completed the skill training course for operations chief of stevedore	Operations chief of stevedore
Work set forth in Article 6, item (xiv) of the Order	A person who has completed the skill training course for operations chief of assembling, etc., of concrete form shoring (construction)	Operations chief of assembling, etc., of concrete form shoring (construction)
Work set forth in Article 6, item (xv) of the Order	A person who has completed the skill training course for operations chief of assembling, etc., of scaffoldings	Operations chief of assembling, etc., of scaffoldings
Work set forth in Article 6, item (xv)-2 of the Order	A person who has completed the skill training course for operations chief of assembling, etc., of steel structure of buildings	Operations chief of erection, etc., of steel structure
Work set forth in Article 6, item (xv)-3 of the Order	A person who has completed the skill training course for operations chief of installing, etc., of steel bridges	Operations chief of installing, etc., of steel bridges

Work set forth in Article 6, item (xv)-4 of the Order	A person who has completed the skill training course for operations chief of assembling, etc., of wooden buildings	Operations chief of assembling, etc., of wooden buildings
Work set forth in Article 6, item (xv)-5 of the Order	A person who has completed the skill training course for operations chief of demolishing, etc., of concrete structures	Operations chief of demolishing, etc., of concrete structures
Work set forth in Article 6, item (xvi) of the Order	A person who has completed the skill training course for operations chief of installing, etc., of concrete bridges	Operations chief of installing, etc., of concrete bridges
Out of the work set forth in Article 6, item (xvii) of the Order, work that use class-1 pressure vessels pertaining to chemical facilities	A person who has completed the skill training course for operations chief of use of class-1 pressure vessel related to chemical facilities	Operations chief of use of class-1 pressure vessel
Out of the work set forth in Article 6, item (xvii) of the Order, work other than those that use chemical class-1 pressure vessels pertaining to chemical facilities	A person who is in possession of a special class, class-1 or class-2 boiler expert's license, or a person who has completed the skill training course for operations chief of use of class-1 pressure vessel related to chemical facilities or of use of ordinary class-1 pressure vessel	
Work set forth in Article 6, item (xviii) of the Order	A person who has completed the skill training course for operations chief of specified chemical substances and tetra alkyl lead, etc. work	Operations chief of specified chemical substances work
Work set forth in Article 6, item (xix) of the Order	A person who has completed the skill training course for operations chief of lead work	Operations chief of lead work

Work set forth in Article 6, item (xx) of the Order	A person who has completed the skill training course for operations chief of specified chemical substances and tetra alkyl lead, etc. work	Operations chief of tetra alkyl lead, etc. work
Out of the work set forth in Article 6, item (xxi) of the Order, work other than those listed in the following column	A person who has completed the skill training course for operations chief of work with oxygen deficient danger or operations chief of work with oxygen deficient/hydrogen sulfide danger	Operations chief of work with oxygen deficient danger
Out of the work set forth in Article 6, item (xxi) of the Order, work in a place with danger of oxygen deficiency listed in the Appended Table 6, item (3)-3, (9) or (12) of the Order (for places listed in the same items, limited to those where the Minister of Health, Labour and Welfare designated as places where it is likely to cause anoxia or sulfide poisoning to workers)	A person who has completed the skill training course for operations chief of work with oxygen deficient or hydrogen sulfide danger	
Work set forth in Article 6, item (xxii) of the Order	A person who has completed the skill training course for operations chief of organic solvent work	Operations chief of organic solvent work
Work set forth in Article 6, item (xxiii) of the Order	A person who has completed the skill training course for operations chief of asbestos work	Operations chief of asbestos work

Remarks The total area for the heating surface area pertaining to the work set forth in Article 6, item (iv) of the Order is to be calculated pursuant to the following requirements: (i) to calculate the heating surface area of a boiler pursuant to the provisions of Article 2 of the Boiler Ordinance; (ii) as regards a once-through boiler, to calculate the heating surface area by multiplying the value obtained pursuant to the preceding item by one-tenth; (iii) as regards a waste heat boiler, to calculate the heating surface area by multiplying its heating surface area by one-half; (iv) as regards the boilers listed in Article 20, item (v), (a) through (d) of the Order, to not include their

heating surface areas in the calculation; and (v) as regards the boilers that are equipped with the automatic control device that has the function to safely stop the boilers and other functions when the boilers have an abnormality pertaining to its pressure, temperature, water level or ignition which is prescribed by the Minister of Health, Labour and Welfare, may choose not include their heating surface areas in the calculation.

Appended Table 2 (Re: Article 30)

Substances	Content (Weight Percent)
Acrylamide	Less than 0.1%
Acrylonitrile	Less than 1%
Acetone	Less than 1%
Alkyl mercury compounds (limited to the substances in which the alkyl radicals are methyl or ethyl radicals)	Less than 1%
Isobutyl alcohol	Less than 1%
Isopropyl alcohol	Less than 1%
Isopentyl alcohol (isoamyl alcohol)	Less than 1%
Ethylamine	Less than 1%
Ethyl ether	Less than 1%
Ethyleneimine	Less than 0.1%
Ethylene oxide	Less than 0.1%
Ethyleneglycol monoethyl ether (cellosolve)	Less than 0.3%
Ethyleneglycol monoethyl ether acetate (cellosolve acetate)	Less than 0.3%
Ethyleneglycol mono-n-buthyl ether (buthylcellosolve)	Less than 1%
Ethyleneglycol monomethyl ether (methylcellosolve)	Less than 0.3%
Vinyl chloride	Less than 0.1%
Auramine	Less than 1%
O-Dichlorobenzene	Less than 1%
O-Phthalodinitrile	Less than 1%
Hydrogen peroxide	Less than 1%
Cadmium compounds	Less than 0.1%
Xylene	Less than 0.3%
Cresol	Less than 1%
Chromic acid and its salts	Less than 0.1%
Chlorobenzene	Less than 1%
Chloroform	Less than 1%
Chloromethylmethylether	Less than 0.1%
Vanadium pentoxide	Less than 0.1%
Coal tar	Less than 0.1%
Isobutyl acetate	Less than 1%
Isopropyl acetate	Less than 1%
Isopentyl acetate (isoamyl acetate)	Less than 1%
Ethyl acetate	Less than 1%
n-Butyl acetate	Less than 1%
n-Propyl acetate	Less than 1%

n-Pentyl acetate (n-amyl acetate)	Less than 1%
Methyl acetate	Less than 1%
Calcium hypochlorite	Less than 1%
Tetraalkyl lead	-
Potassium cyanide	Less than 1%
Sodium cyanide	Less than 1%
Carbon tetrachloride	Less than 1%
1,4-Dioxyn	Less than 1%
Cyclohexanol	Less than 1%
Cyclohexanone	Less than 1%
1,2-Dichloroethane (ethylene dichloride)	Less than 1%
1,2-Dichloroethylene (acetylene dichloride)	Less than 1%
Dichloromethane (methylene dichloride)	Less than 1%
3,3'-Dichloro-4,4'-Diaminodiphenyl methane	Less than 0.1%
N,N-Dimethylformamide	Less than 0.3%
Methyl bromide	Less than 1%
Dichromic acid	Less than 0.1%
Ammonium nitrate	-
Mercury and its inorganic compounds (excluding mercury sulfide)	Less than 0.3%
Styrene	Less than 0.3%
1,1,2,2-Tetrachloroethane (acetylene tetrachloride)	Less than 1%
Tetrachloroethylene (perchloroethylene)	Less than 0.1%
Tetrahydrofuran	Less than 1%
1,1,1-Trichloroethane	Less than 1%
Trichloroethylene	Less than 0.1%
Tolylenediisocyanate	Less than 1%
Toluene	Less than 0.3%
Lead compounds (limited to lead compounds listed in Article 18, item (xxiv))	Less than 0.1%
Nickel compounds (limited to the powder-like substances excluding nickel carbonyl)	Less than 0.1%
Nickel carbonyl	Less than 0.1%
Nitroglycerine	-
Nitrocellulose	-
Carbon disulfide	Less than 0.3%
n-Hexane	Less than 1%
p-Dimethylaminoazobenzene	Less than 1%
p-Nitrochlorobenzene	Less than 1%
Picric acid	-
Arsenic or its compounds (excluding arsine and gallium arsenide)	Less than 0.1%
Phenol	Less than 0.1%
1,3-Butadiene	Less than 0.1%
1-Butanol	Less than 1%
2-Butanol	Less than 1%
Hydrogen fluoride	Less than 1%
β-Propiolactone	Less than 0.1%
Benzene	Less than 0.1%

Pentachlorophenol (PCP) and its sodium salts	Less than 0.3%
Formaldehyde	Less than 0.1%
Magenta	Less than 0.1%
Methanol	Less than 0.3%
Methyl isobutyl ketone	Less than 1%
Methyl ethyl ketone	Less than 1%
Methylcyclohexanol	Less than 1%
Methylcyclohexanone	Less than 1%
Methyl n-butyl ketone	Less than 1%
Methyl iodide	Less than 1%
Sodium hydrogensulfide	Less than 1%
Sodium sulfide	Less than 1%
Dimethylsulfate	Less than 0.1%

Remarks Substances Excluded from Dangerous Goods and Harmful Substances Subject to Indicate Their Names (i) out of the preparations and other substances containing tetraalkyl lead, etc., leaded gasoline; and (ii) out of the preparations and other substances containing nitroglycerin, those desensitized with desensitizing agent having a nonvolatility of 98% or more, and containing nitroglycerin of less than 1%.

Appended Table 2-2 (Re: Article 34-2)

Substances	Content (Weight Percent)
Acrylamide	Less than 0.1%
Acrylic acid	Less than 1%
Ethyl acrylate	Less than 0.1%
n-Butyl acrylate	Less than 0.1%
2-Hydroxypropyl acrylate	Less than 0.1%
Methyl acrylate	Less than 0.1%
Acrylonitrile	Less than 0.1%
Acrolein	Less than 1%
Sodium azide	Less than 1%
Adipic acid	Less than 1%
Adiponitrile	Less than 1%
Acetylsalicylic acid (Aspirin)	Less than 0.1%
Acetamide	Less than 0.1%
Acetaldehyde	Less than 0.1%
Acetonitrile	Less than 1%
Acetophenone	Less than 1%
Acetone	Less than 0.1%
Acetone cyanohydrin	Less than 0.1%
Aniline	Less than 0.1%
Ammonium amidosulfate	Less than 1%
2-Aminoethanol	Less than 0.1%
4-Amino-6-tert-butyl-3-methylthio-1,2,4-triazin-5(4H)-one (Metribuzin)	Less than 1%
3-Amino-1H-1,2,4-triazole (Amitrole)	Less than 0.1%

4-Amino-3,5,6-trichloropyridine-2-carboxylic acid (Picloram)	Less than 1%
2-Aminopyridine	Less than 1%
Sodium bisulfite	Less than 0.1%
Allyl alcohol	Less than 1%
1-Allyloxy-2,3-epoxypropane	Less than 0.1%
Arylmercury compounds	Less than 0.1%
Allyl n-propyl disulfide	Less than 0.1%
Trimethyl phosphite	Less than 1%
Alkylaluminum compounds	Less than 1%
Alkylmercury compounds	Less than 0.1%
3-(α -Acetonylbenzyl)-4-hydroxycoumarin (Warfarin)	Less than 0.1%
α,α -Dichlorotoluene	Less than 0.1%
α -Methylstyrene	Less than 0.1%
Water-soluble aluminum salts	Less than 1%
Antimony and its compounds	Less than 0.1%
Ammonia	Less than 0.1%
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	Less than 0.1%
Methyl isocyanate	Less than 0.1%
Isoprene	Less than 0.1%
N-Isopropylaniline	Less than 0.1%
O-Ethyl-O-(3-methyl-4-methylthiophenyl) N-isopropylaminophosphonate; Ethyl 3-methyl-4-(methylthio)phenyl (isopropyl)phosphoramidate (Fenamiphos)	Less than 0.1%
Isopropylamine	Less than 1%
Isopropyl ether	Less than 0.1%
3'-Isopropoxy-2-trifluoromethylbenzanilide (Flutolanil)	Less than 1%
Isopentyl alcohol (Isoamylalcohol)	Less than 1%
Isophorone	Less than 0.1%
Sulfur monochloride	Less than 1%
Carbon monoxide	Less than 0.1%
Nitrogen monoxide	Less than 1%
Dinitrogen oxide	Less than 0.1%
Yttrium and its compounds	Less than 1%
ϵ -Caprolactam	Less than 1%
2-Imidazolidinethione	Less than 0.1%
4,4'-(4-Iminocyclohexa-2,5-dienylidenemethylene)dianiline hydrochloride (alias CI basic red 9)	Less than 0.1%
Indium and its compounds	Less than 1%
Indene	Less than 0.1%
Urethane	Less than 0.1%
Ethanol	Less than 0.1%
Ethanethiol	Less than 1%
Ethylidenenorbornene	Less than 0.1%
Ethylamine	Less than 1%
Ethyl ether	Less than 0.1%
Ethyl sec-pentyl ketone	Less than 1%

Ethyl-p-nitrophenylthionobenzenphosphonate (EPN)	Less than 0.1%
O-Ethyl-S-phenyl ethylphosphonothiolothionate (Fonofos)	Less than 0.1%
2-Ethylhexanoic acid	Less than 0.1%
Ethylbenzene	Less than 0.1%
Ethyl methyl ketone peroxide	Less than 1%
N-Ethylmorpholine	Less than 0.1%
Ethyleneimine	Less than 0.1%
Ethylene oxide	Less than 0.1%
Ethylene glycol	Less than 0.1%
Ethylene glycol monoisopropyl ether	Less than 1%
Ethylene glycol monoethyl ether (Cellosolve)	Less than 0.1%
Ethylene glycol monoethyl ether acetate (Cellosolve acetate)	Less than 0.1%
Ethylene glycol mono-n-butyl ether (Butyl cellosolve)	Less than 0.1%
Ethylene glycol monomethyl ether (Methyl cellosolve)	Less than 0.1%
Ethylene glycol monomethyl ether acetate	Less than 0.1%
Ethylene chlorohydrin	Less than 0.1%
Ethylenediamine	Less than 0.1%
1,1'-Ethylene-2,2'-bipyridinium dibromide (Diquat)	Less than 0.1%
2-Ethoxy-2,2-dimethylethane; 2-Ethoxy-2-methylpropane	Less than 1%
2-(4-Ethoxyphenyl)-2-methylpropyl 3-phenoxybenzyl ether (Etofenprox)	Less than 1%
Epichlorohydrin	Less than 0.1%
1,2-Epoxy-3-isopropoxypropane	Less than 1%
2,3-Epoxy-1-propanal	Less than 0.1%
2,3-Epoxy-1-propanol	Less than 0.1%
2,3-Epoxypropyl phenyl ether	Less than 0.1%
Emery	Less than 1%
Erionite	Less than 0.1%
Zinc chloride	Less than 0.1%
Allyl chloride	Less than 0.1%
Ammonium chloride	Less than 0.1%
Cyanogen chloride	Less than 1%
Hydrogen chloride	Less than 0.1%
Thionyl chloride	Less than 1%
Vinyl chloride	Less than 0.1%
Benzyl chloride	Less than 0.1%
Benzoyl chloride	Less than 1%
Phosphoryl chloride	Less than 1%
Chlorine	Less than 1%
Chlorinated camphene (Toxaphene)	Less than 0.1%
Chlorinated diphenyloxide	Less than 1%
Yellow Phosphorus	Less than 0.1%
4,4'-Oxybis(2-chloroaniline)	Less than 0.1%
O,O,O',O'-Tetraethyl oxybis(thiophosphonate) (Sulfotepp, Sulfotep)	Less than 0.1%
4,4'-Oxybis(benzenesulfonylhydrazide)	Less than 1%
Tetrasodium oxybisphosphonate	Less than 1%
Octachloronaphthalene	Less than 1%

1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methano-1H-indene (Chlordane)	Less than 0.1%
2-Octanol	Less than 1%
Octane	Less than 1%
Ozone	Less than 0.1%
o-Chloroacetophenone	Less than 0.1%
Auramine	Less than 0.1%
o-Anisidine	Less than 0.1%
o-Chlorostyrene	Less than 1%
o-Chlorotoluene	Less than 0.1%
o-Dichlorobenzene	Less than 1%
o-sec-Butylphenol	Less than 1%
o-Nitroanisole	Less than 0.1%
o-Phthalodinitrile	Less than 1%
Hydrogen peroxide	Less than 0.1%
Gasoline	Less than 0.1%
Catechol	Less than 0.1%
Cadmium and its compounds	Less than 0.1%
Carbon black	Less than 0.1%
Calcium cyanamide	Less than 1%
Formic acid	Less than 0.1%
Ethyl formate	Less than 1%
Methyl formate	Less than 1%
Xylidine	Less than 0.1%
Xylene	Less than 0.1%
Silver and its water-soluble compounds	Less than 0.1%
Cumene	Less than 1%
Glutaraldehyde	Less than 0.1%
Creosote oil	Less than 0.1%
Cresol	Less than 1%
Chromium and its compounds	Less than 0.1%
Chloroacetyl chloride	Less than 1%
Chloroacetaldehyde	Less than 0.1%
Chloroacetone	Less than 1%
Chloroethane (Ethyl chloride)	Less than 0.1%
2-Chloro-4-ethylamino-6-isopropylamino-1,3,5-triazine (Atrazine)	Less than 0.1%
4-Chloro-o-phenylenediamine	Less than 0.1%
Chlorodifluoromethane (HCFC-22)	Less than 0.1%
2-Chloro-6-trichloromethylpyridine (Nitrapyrin)	Less than 1%
2-Chloro-1,1,2-trifluoroethyl difluoromethyl ether (Enflurane)	Less than 0.1%
1-Chloro-1-nitropropane	Less than 1%
Chloropicrin	Less than 1%
Chlorophenol	Less than 0.1%
2-Chloro-1,3-butadiene	Less than 0.1%
2-Chloropropionic acid	Less than 1%
2-Chlorobenzylidenemalononitrile	Less than 0.1%
Chlorobenzene	Less than 0.1%

Chloropentafluoroethane (CFC-115)	Less than 1%
Chloroform	Less than 0.1%
Chloromethane (Methyl chloride)	Less than 0.1%
4-Chloro-2-methylaniline and its hydrochloride	Less than 0.1%
Chloromethyl methyl ether	Less than 0.1%
Light oil; Gas oil	Less than 0.1%
Shale oils	Less than 0.1%
Ketene	Less than 1%
Germanium tetrahydride	Less than 1%
Mineral oil	Less than 0.1%
Phosphorus pentachloride	Less than 1%
Paraffin wax	Less than 1%
Vanadium pentoxide	Less than 0.1%
Cobalt and its compounds	Less than 0.1%
Bromine pentafluoride	Less than 1%
Coal tar	Less than 0.1%
Coal tar naphtha	Less than 1%
Acetic acid	Less than 0.1%
Ethyl acetate	Less than 1%
1,3-Dimethylbutyl acetate	Less than 1%
Lead acetate	Less than 0.1%
Vinyl acetate	Less than 0.1%
Butyl acetate	Less than 1%
Propyl acetate	Less than 1%
Benzyl acetate	Less than 1%
Pentyl acetate (Amyl acetate)	Less than 0.1%
Methyl acetate	Less than 1%
Subtilisins	Less than 0.1%
Phosphorus trichloride	Less than 1%
Zinc oxide	Less than 1%
Aluminum oxide	Less than 1%
Calcium oxide	Less than 1%
Titanium(IV) oxide	Less than 1%
Iron oxide	Less than 1%
1,2-Butylene oxide; 1,2-Epoxybutane	Less than 0.1%
Propylene oxide; 1,2-Epoxypropane	Less than 0.1%
Mesityl oxide; 4-Methyl-3-penten-2-one	Less than 0.1%
Boron trioxide	Less than 1%
Boron tribromide	Less than 1%
Chlorine trifluoride	Less than 1%
Boron trifluoride	Less than 1%
Calcium hypochlorite	Less than 1%
N,N'-Diacetylbenzidine	Less than 0.1%
Diacetone alcohol; 4-Hydroxy-4-methylpentan-2-one	Less than 0.1%
Diazomethane	Less than 0.1%
Cyanamide	Less than 0.1%
Ethyl 2-cyanoacrylate	Less than 0.1%
Methyl 2-cyanoacrylate	Less than 0.1%

2,4-Diaminoanisole	Less than 0.1%
4,4'-Diaminodiphenyl ether	Less than 0.1%
4,4'-Diaminodiphenyl sulfide	Less than 0.1%
4,4'-Diamino-3,3'-dimethyldiphenylmethane; 4,4'-Methylenebis(2-methylbenzenamine)	Less than 0.1%
2,4-Diaminotoluene	Less than 0.1%
Tetraalkyllead	Less than 0.1%
Potassium cyanide	Less than 1%
Calcium cyanide	Less than 1%
Hydrogen cyanide	Less than 1%
Sodium cyanate	Less than 0.1%
Diisobutyl ketone	Less than 1%
Diisopropylamine	Less than 1%
Diethanolamine; 2,2'-Iminodiethanol	Less than 1%
2-(Diethylamino) ethanol	Less than 1%
Diethylamine	Less than 1%
Diethyl ketone	Less than 1%
Diethyl-p-nitrophenylthiophosphate; O,O-Diethyl O-4-nitrophenyl phosphorothioate (alias Parathion)	Less than 0.1%
1,2-Diethylhydrazine	Less than 0.1%
Diethylenetriamine; 2,2'-Iminodi(ethylamine)	Less than 0.1%
Carbon tetrachloride	Less than 0.1%
1,4-Dioxane	Less than 0.1%
O,O,O',O'-Tetraethyl 1,4-dioxane-2,3-diylldithiobis (thiophosphonate); S,S'-1,4-Dioxane-2,3-diylbis(O,O-diethyl phosphorodithioate) (Dioxathion)	Less than 1%
1,3-dioxolane	Less than 0.1%
Cyclohexanol	Less than 0.1%
Cyclohexanone	Less than 0.1%
Cyclohexane	Less than 0.1%
Cyclohexylamine	Less than 0.1%
2-Cyclohexylbiphenyl	Less than 0.1%
Cyclohexene	Less than 1%
Cyclopentadienyltricarbonyl manganese; Tricarbonyl(η -cyclopentadienyl) manganese	Less than 1%
Cyclopentadiene	Less than 1%
Cyclopentane	Less than 1%
Dichloroacetylene	Less than 1%
Dichloroethane	Less than 0.1%
Dichloroethylene; Dichloroethene	Less than 0.1%
3,3'-Dichloro-4,4'-diaminodiphenylmethane; 4,4'-methylenebis(2-chloroaniline)	Less than 0.1%
Dichlorodifluoromethane (CFC-12)	Less than 1%
1,3-Dichloro-5,5-dimethylimidazolidine-2,4-dione	Less than 1%
3,5-Dichloro-2,6-dimethyl-4-pyridinol (Clopidol)	Less than 1%
Dichlorotetrafluoroethane (alias CFC-114)	Less than 1%
2,2-Dichloro-1,1,1-trifluoroethane (HCFC-123)	Less than 1%
1,1-Dichloro-1-nitroethane	Less than 1%
3-(3,4-Dichlorophenyl)-1,1-dimethylurea (Diuron)	Less than 1%

Sodium 2,4-dichlorophenoxyethyl sulfate	Less than 1%
(2,4-Dichlorophenoxy)acetic acid	Less than 0.1%
1,4-Dichloro-2-butene	Less than 0.1%
Dichlorofluoromethane (HCFC-21)	Less than 0.1%
1,2-Dichloropropane	Less than 0.1%
2,2-Dichloropropionic acid	Less than 1%
1,3-Dichloropropene	Less than 0.1%
Dichloromethane (Methylenedichloride)	Less than 0.1%
Osmium tetroxide	Less than 1%
Dicyan	Less than 1%
Dicyclopentadienyl iron; Bis(η -cyclopentadienyl)iron	Less than 1%
Dicyclopentadiene; 3a,4,7,7a-Tetrahydro-4,7-methanoindene	Less than 1%
2,6-Di-tert-butyl-4-cresol; 2,6-Di-tert-butyl-4-methylphenol	Less than 0.1%
Diisopropyl 1,3-dithiolan-2-ylidenemalonate (Isoprothiolane)	Less than 1%
O-Ethyl O-4-methylthiopenyl S-propyl phosphorodithioate (Sulprofos)	Less than 1%
O,O-Diethyl-S-(2-ethylthioethyl) phosphorodithioate (Disulfoton)	Less than 0.1%
O,O-Diethyl-S-ethylthiomethyl phosphorodithioate (Phorate)	Less than 0.1%
O,O-Dimethyl-S-[(4-oxo-1,2,3-benzotriazine-3(4H)-yl)methyl] phosphorodithioate; S-(3,4-Dihydroxy-4-oxobenzo[d][1,2,3]triazin-3-ylmethyl) O,O-dimethyl phosphorodithioate (Azinphosmethyl)	Less than 0.1%
O,O-Dimethyl-S-1,2-bis(ethoxycarbonyl)ethyl phosphorodithioate; Diethyl[(dimethoxyphosphinothioyl)thio]butanedioate (Malathion)	Less than 0.1%
Disodium 4-[(2,4-dimethylphenyl)azo]-3-hydroxy-2,7-naphthalenedisulfonate (Ponceau MX)	Less than 0.1%
Disodium 8-[[[3,3'-dimethyl-4'-[[4-[(4-methylphenyl)sulfonyl]oxy] phenyl] azo][1,1'-biphenyl]-4-yl]azo]-7-hydroxy-1,3-naphthalene disulfonate (CI acid red 114)	Less than 0.1%
Disodium 3-hydroxy-4-[(2,4,5-trimethylphenyl)azo]-2,7-naphthalenedisulfonate (Ponceau 3R)	Less than 0.1%
2,4-Dinitrotoluene	Less than 0.1%
Dinitrobenzene	Less than 0.1%
2-(Di-n-butylamino) ethanol	Less than 1%
Di-n-propyl ketone	Less than 1%
Divinylbenzene	Less than 0.1%
Diphenylamine	Less than 0.1%
Diphenyl ether	Less than 1%
1,2-Dibromoethane (EDB)	Less than 0.1%
1,2-Dibromo-3-chloropropane	Less than 0.1%
Dibromodifluoromethane	Less than 1%

Dibenzoyl peroxide	Less than 0.1%
Diborane	Less than 1%
N,N-Dimethylacetamide	Less than 0.1%
N,N-Dimethylaniline	Less than 1%
[4-[[4-(Dimethylamino)phenyl][4-[ethyl(3-sulfobenzyl)amino]phenyl] methylidene]cyclohexane-2,5-dien-1-ylidene](ethyl)(3-sulfonatobenzyl) ammonium sodium salt (Benzyl violet 4B)	Less than 0.1%
Dimethylamine	Less than 0.1%
Dimethylethylmercaptoethylthiophosphate; S(andO)-2-Ethylthioethyl O,O-dimethyl phosphorothioate (Methyl demeton)	Less than 0.1%
Dimethylethoxysilane	Less than 0.1%
Dimethylcarbamoyl chloride	Less than 0.1%
Dimethyl-2,2-dichlorovinylphosphate; 2,2-Dichloroethenyl dimethyl phosphate (DDVP)	Less than 0.1%
Dimethyl disulfide	Less than 0.1%
N,N-Dimethylnitrosoamine	Less than 0.1%
Dimethyl-p-nitrophenylphosphorothioate; O,O-Dimethyl O-4-nitrophenyl phosphorothioate (Methyl parathion)	Less than 0.1%
Dimethylhydrazine	Less than 0.1%
1,1'-Dimethyl-4,4'-bipyridinium dichloride (Paraquat)	Less than 1%
1,1'-Dimethyl-4,4'-bipyridinium di(methanesulfonic acid) salt	Less than 1%
Methyl 2-(4,6-dimethyl-2-pyrimidinylaminocarbonylamino)benzoate (Sulfometuron methyl)	Less than 0.1%
N,N-Dimethylformamide	Less than 0.1%
1-[(2,5-Dimethoxyphenyl)azo]-2-naphthol (Citrus Red No. 2)	Less than 0.1%
Ethyl bromide	Less than 0.1%
Hydrogen bromide	Less than 1%
Methyl bromide	Less than 0.1%
Oxalic acid	Less than 0.1%
Bromine	Less than 1%
Brominated biphenyl	Less than 0.1%
Nitric acid	Less than 1%
Ammonium nitrate	-
n-Propyl nitrate	Less than 1%
Camphor	Less than 0.1%
Silane	Less than 1%
Silica	Less than 0.1%
Zirconium and its compounds	Less than 1%
Man-made mineral fiber	Less than 1%
Mercury and its inorganic compounds	Less than 0.1%
Potassium hydroxide	Less than 1%
Calcium hydroxide	Less than 1%
Cesium hydroxide	Less than 1%
Sodium hydroxide	Less than 1%

Lithium hydroxide	Less than 1%
Lithium hydride	Less than 0.1%
Tin and its compounds	Less than 0.1%
Styrene	Less than 0.1%
Zinc stearate	Less than 1%
Sodium stearate	Less than 1%
Lead stearate	Less than 0.1%
Magnesium stearate	Less than 1%
Strychnine	Less than 1%
Petroleum ether	Less than 1%
Petroleum naphtha	Less than 1%
Petroleum benzine	Less than 1%
Sodium sesquicarbonate	Less than 1%
Selenium and its compounds	Less than 0.1%
2-tert-Butylimino-3-isopropyl-5-phenyltetrahydro-4H-1,3,5-thiadiazin-4-one (Buprofezin)	Less than 1%
Thallium and its water-soluble compounds	Less than 0.1%
Silicon carbide	Less than 0.1%
Tungsten and its water-soluble compounds	Less than 1%
Tantalum and its oxide	Less than 1%
O,O,O',O'-Tetramethyl thiodi(p-phenylene)-dioxybis(phosphorothioate) (Temephos)	Less than 1%
Thiourea	Less than 0.1%
4,4'-Thiobis(6-tert-butyl-3-methylphenol)	Less than 0.1%
Thiophenol	Less than 0.1%
O,O-Diethyl O-(2-isopropyl-6-methyl-4-pyrimidinyl) phosphorothioate (Diazinon)	Less than 0.1%
O,O-Diethyl-ethylthioethyl phosphorothioate (alias Demeton)	Less than 0.1%
O,O-Diethyl-O-(6-oxo-1-phenyl-1,6-dihydro-3-pyridazinyl) phosphorothioate (Pyridaphenthion)	Less than 1%
O,O-Diethyl-O-(3,5,6-trichloro-2-pyridyl) phosphorothioate (Chlorpyrifos)	Less than 1%
O,O-Diethyl-O-[4-(methylsulfinyl)phenyl] phosphorothioate (Fensulfothion)	Less than 1%
O,O-Dimethyl-O-(2,4,5-trichlorophenyl) phosphorothioate (Ronnel)	Less than 0.1%
O,O-Dimethyl-O-(3-methyl-4-nitrophenyl) phosphorothioate (Fenitrothion)	Less than 1%
O,O-Dimethyl-O-(3-methyl-4-methylthiophenyl) phosphorothioate (Fenthion)	Less than 0.1%
Decaborane	Less than 1%
Water-soluble iron salts	Less than 1%
1,4,7,8-Tetraaminoanthraquinone (Disperse Blue 1)	Less than 0.1%
Tetraethylthiuram disulfide (Disulfiram)	Less than 0.1%
Tetraethyl pyrophosphate (TEPP)	Less than 1%
Tetraethoxysilane	Less than 1%
1,1,2,2-Tetrachloroethane (Tetrachloroacetylene)	Less than 1%

N-(1,1,2,2-Tetrachloroethylthio)-1,2,3,6-tetrahydrophthalimide; N-(1,1,2,2-Tetrachloroethylthio)-3a,4,7,7a-tetrahydrophthalimide (Captafol)	Less than 0.1%
Tetrachloroethylene (alias Perchloroethylene)	Less than 0.1%
4,5,6,7-Tetrachloro-1,3-dihydrobenzo[c]furan-2-one; 4,5,6,7-Tetrachloro-(3H)-benzo[c]furan-2-one (Fthalide)	Less than 1%
Tetrachlorodifluoroethane (CFC-112)	Less than 1%
2,3,7,8-Tetrachlorodibenzo-[1,4]-dioxin	Less than 0.1%
Tetrachloronaphthalene	Less than 1%
Tetrasodium 3,3'-[(3,3'-dimethyl-4,4'-biphenylene)bis(azo)]bis[5-amino-4-hydroxy-2,7-naphthalenedisulfonate] (Trypane blue)	Less than 0.1%
Tetrasodium 3,3'-[(3,3'-dimethoxy-4,4'-biphenylene)bis(azo)]bis[5-amino-4-hydroxy-2,7-naphthalenedisulfonate] (CI direct blue 15)	Less than 0.1%
Tetranitromethane	Less than 0.1%
Tetrahydrofuran	Less than 1%
Tetrafluoroethylene	Less than 0.1%
1,1,2,2-Tetrabromoethane	Less than 1%
Tetrabromomethane	Less than 1%
Tetramethylsuccinic acid dinitrile	Less than 1%
Tetramethylthiuram disulfide (Thiuram)	Less than 0.1%
Tetramethoxysilane	Less than 1%
Tetryl	Less than 0.1%
Terphenyl	Less than 1%
Tellurium and its compounds	Less than 0.1%
Turpentine oil	Less than 0.1%
Terephthalic acid	Less than 0.1%
Copper and its compounds	Less than 0.1%
Kerosine	Less than 0.1%
Triethanolamine	Less than 0.1%
Triethylamine	Less than 1%
Trichloroethane	Less than 0.1%
Trichloroethylene	Less than 0.1%
Trichloroacetic acid	Less than 0.1%
1,1,2-Trichloro-1,2,2-trifluoroethane; CFC-113	Less than 1%
Trichloronaphthalene	Less than 1%
1,1,1-Trichloro-2,2-bis(4-chlorophenyl)ethane (DDT)	Less than 0.1%
1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane (Methoxychlor)	Less than 0.1%
2,4,5-Trichlorophenoxyacetic acid	Less than 0.1%
Trichlorofluoromethane (CFC-11)	Less than 0.1%
1,2,3-Trichloropropane	Less than 0.1%
1,2,4-Trichlorobenzene	Less than 1%
Trichloromethylsulfenyl chloride	Less than 1%
N-(Trichloromethylthio)-1,2,3,6-tetrahydrophthalimide; N-(Trichloromethylthio)-3a,4,7,7a-tetrahydrophthalimide (Captan)	Less than 0.1%
Tricyclohexyltin hydroxide	Less than 1%

1,3,5-Tris(2,3-epoxypropyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	Less than 0.1%
Tris(N,N-dimethyldithiocarbamate)iron (Ferbam)	Less than 0.1%
Trinitrotoluene	Less than 0.1%
Triphenylamine	Less than 1%
Tribromomethane	Less than 0.1%
2-Trimethylacetyl-1,3-indandione	Less than 1%
Trimethylamine	Less than 1%
Trimethylbenzene	Less than 1%
Tolylene diisocyanate	Less than 0.1%
Toluidine	Less than 0.1%
Toluene	Less than 0.1%
Naphthalene	Less than 0.1%
1-Naphthylthiourea	Less than 1%
1-Naphthyl-N-methylcarbamate (Carbaryl)	Less than 1%
Lead and its inorganic compounds	Less than 0.1%
Sodium disulfite	Less than 0.1%
Nicotine	Less than 0.1%
Sulfur dioxide	Less than 1%
Chlorine dioxide	Less than 1%
Nitrogen dioxide	Less than 0.1%
Propylene dinitrate	Less than 1%
Nickel and its compounds	Less than 0.1%
Nitrilotriacetic acid	Less than 0.1%
5-Nitroacenaphthene	Less than 0.1%
Nitroethane	Less than 1%
Nitroglycol	Less than 1%
Nitroglycerin	-
Nitrocellulose	-
N-Nitrosomorpholine	Less than 0.1%
Nitrotoluene	Less than 0.1%
Nitropropane	Less than 0.1%
Nitrobenzene	Less than 0.1%
Nitromethane	Less than 0.1%
n-Butyl lactate	Less than 1%
Carbon disulfide	Less than 0.1%
Nonane	Less than 1%
n-Butylamine	Less than 1%
n-Butyl ethyl ketone	Less than 1%
n-Butyl 2,3-epoxypropyl ether	Less than 0.1%
Methyl N-[1-(N-n-butylcarbamoyl)-1H-2-benzimidazolyl]carbamate (Benomyl)	Less than 0.1%
Platinum and its water-soluble salts	Less than 0.1%
Hafnium and its compounds	Less than 1%
p-Anisidine	Less than 1%
p-Chloroaniline	Less than 0.1%
p-Dichlorobenzene	Less than 0.1%
p-Dimethylaminoazobenzene	Less than 0.1%

p-tert-Butyltoluene	Less than 0.1%
p-Nitroaniline	Less than 0.1%
p-Nitrochlorobenzene	Less than 0.1%
p-Phenylazoaniline	Less than 0.1%
p-Benzoquinone	Less than 1%
p-Methoxyphenol	Less than 1%
Barium and its water-soluble compounds	Less than 1%
Picric acid	-
Bis(2,3-epoxypropyl) ether	Less than 1%
1,3-Bis[(2,3-epoxypropyl)oxy]benzene	Less than 0.1%
Bis(2-chloroethyl) ether	Less than 1%
Bis(2-chloroethyl) sulfide (Mustard gas)	Less than 0.1%
N,N-Bis(2-chloroethyl)methylamine N-oxide	Less than 0.1%
S,S'-Methylene-O,O,O',O'-tetraethyl bis(dithiophosphate) (Ethion)	Less than 1%
Bis(2-dimethylaminoethyl) ether	Less than 1%
Arsenic and its compounds	Less than 0.1%
Hydrazine	Less than 0.1%
Hydrazine monohydrate	Less than 0.1%
Hydroquinone	Less than 0.1%
4-Vinyl-1-cyclohexene	Less than 0.1%
4-Vinylcyclohexene dioxide; 4-Vinyl-1-cyclohexene dioxide	Less than 0.1%
Vinyltoluene	Less than 1%
Biphenyl	Less than 1%
Piperazine dihydrochloride	Less than 1%
Pyridine	Less than 0.1%
Pyrethrum	Less than 0.1%
Phenyloxilane	Less than 0.1%
Phenylhydrazine	Less than 0.1%
Phenylphosphine	Less than 0.1%
Phenylenediamine	Less than 0.1%
Phenothiazine	Less than 0.1%
Phenol	Less than 0.1%
Ferrovandium	Less than 1%
1,3-Butadiene	Less than 0.1%
Butanol	Less than 0.1%
Diethyl phthalate	Less than 0.1%
Di-n-butyl phthalate	Less than 0.1%
Dimethyl phthalate	Less than 1%
Bis (2-ethylhexyl) phthalate (DEHP)	Less than 0.1%
Butane	Less than 1%
1-Butanethiol	Less than 0.1%
Carbonyl fluoride	Less than 1%
Vinylidene fluoride	Less than 1%
Vinyl fluoride	Less than 0.1%
Fluorine and its water-soluble inorganic compounds	Less than 0.1%
2-Butenal	Less than 0.1%
Sodium fluoroacetate	Less than 1%

Furfural	Less than 0.1%
Furfuryl alcohol	Less than 1%
1,3-Propanesultone	Less than 0.1%
Propionic acid	Less than 1%
Propyl alcohol	Less than 0.1%
Propylenimine	Less than 0.1%
Propylene glycol monomethyl ether	Less than 1%
2-Propyn-1-ol	Less than 1%
Bromoethylene	Less than 0.1%
2-Bromo-2-chloro-1,1,1-trifluoroethane (Halothane)	Less than 1%
Bromochloromethane	Less than 1%
Bromodichloromethane	Less than 0.1%
5-Bromo-3-sec-butyl-6-methyl-1,2,3,4-tetrahydropyrimidine-2,4-dione; 5-Bromo-3-sec-butyl-6-methyl-2,4(1H,3H)-pyrimidinedione (Bromacil)	Less than 0.1%
Bromotrifluoromethane	Less than 1%
2-Bromopropane	Less than 0.1%
Hexachloroethane	Less than 0.1%
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4, 4a, 5, 6, 7, 8, 8a-octahydro-exo-1,4-endo-5,8-dimethanonaphthalene; 1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4, 4a, 5, 6, 7, 8, 8a-octahydro-endo-1,4-exo-5,8-dimethanonaphthalene (Dieldrin)	Less than 0.1%
1,2,3,4,10,10-Hexachloro-6,7-epoxy-1,4, 4a, 5, 6,7,8, 8a-octahydro-endo-1,4-endo-5,8-dimethanonaphthalene; 1,2,3,4,10,10-Hexachloro-6,7- epoxy-1,4, 4a, 5, 6,7,8, 8a-octahydro-exo-1,4-exo-5,8-dimethanonaphthalene (Endrin)	Less than 1%
1,2,3,4,5,6-Hexachlorocyclohexane (Lindane)	Less than 0.1%
Hexachlorocyclopentadiene	Less than 0.1%
Hexachloronaphthalene	Less than 1%
1,4,5,6,7,7-Hexachlorobicyclo [2.2.1]-5-heptene-2,3-dicarboxylic acid (Chlorendic acid)	Less than 0.1%
1,2,3,4,10,10-Hexachloro-1, 4, 4a, 5, 8, 8a-hexahydro-exo-1,4-endo-5,8-dimethanonaphthalene (Aldrin)	Less than 0.1%
Hexachlorohexahydromethanobenzodioxathiepineoxide; 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-hexahydro-6,9-methano-2,4,3-benzodioxathiepine 3-oxide (Benzoepin)	Less than 1%
Hexachlorobenzene	Less than 0.1%
Hexahydro-1,3,5-trinitro-1,3,5-triazine (Cyclonite)	Less than 1%
Hexafluoroacetone	Less than 0.1%
Hexamethylphosphoric triamide	Less than 0.1%
Hexamethylenediamine	Less than 0.1%
Hexamethylene diisocyanate	Less than 0.1%
Hexane	Less than 0.1%
1-Hexene	Less than 1%
β -Butyrolactone	Less than 0.1%
β -Propiolactone	Less than 0.1%

1,4,5,6,7,8,8-Heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (Heptachlor epoxide)	Less than 0.1%
1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-tetrahydro-4,7-methano-1H-indene (Heptachlor)	Less than 0.1%
Heptane	Less than 1%
Ammonium peroxodisulfate	Less than 0.1%
Potassium peroxodisulfate	Less than 0.1%
Sodium peroxodisulfate	Less than 0.1%
Perfluorooctanoic acid ammonium salt	Less than 0.1%
Benzene	Less than 0.1%
1,2,4-Benzenetricarboxylic 1,2-anhydride	Less than 0.1%
Benzo[a]anthracene	Less than 0.1%
Benzo[a]pyrene	Less than 0.1%
Benzofuran	Less than 0.1%
Benzo[e]fluoranthene	Less than 0.1%
Pentachloronaphthalene	Less than 1%
Pentachloronitrobenzene	Less than 0.1%
Pentachlorophenol (PCP) and its sodium salts	Less than 0.1%
1-Pentanal	Less than 1%
1,1,3,3,3-Pentafluoro-2-(trifluoromethyl)-1-propene (PFIB)	Less than 1%
Pentaborane	Less than 1%
Pentane	Less than 1%
Sodium borate	Less than 0.1%
Phosgene	Less than 1%
(2-Formylhydrazino)-4-(5-nitro-2-furyl) thiazole	Less than 0.1%
Formamide	Less than 1%
Formaldehyde	Less than 0.1%
Magenta	Less than 0.1%
Manganese and its inorganic compounds	Less than 1%
Mineral spirits (include mineral thinner, petroleum spirits, white spirits and mineral turpentine)	Less than 1%
Acetic anhydride	Less than 1%
Phthalic anhydride	Less than 0.1%
Maleic anhydride	Less than 0.1%
m-Xylylenediamine	Less than 0.1%
Methacrylic acid	Less than 1%
Methyl methacrylate	Less than 0.1%
Methacrylonitrile	Less than 0.1%
m-Dicyanobenzene	Less than 1%
Methanol	Less than 0.1%
Ethyl methanesulfonate	Less than 0.1%
Methyl methanesulfonate	Less than 0.1%
Methylal	Less than 0.1%
Methylacetylene	Less than 1%
N-Methylaniline	Less than 1%
2,2'-[[4-(Methylamino)-3-nitrophenyl]amino]diethanol (HC Blue No. 1)	Less than 0.1%

O-(4-tert-Butyl-2-chlorophenyl)-O-methyl N-methylaminophosphonate (Crufomate)	Less than 1%
Methylamine	Less than 0.1%
Methyl isobutyl ketone	Less than 1%
Methyl ethyl ketone	Less than 1%
2-Isopropoxyphenyl N-methylcarbamate (Propoxur)	Less than 0.1%
2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl N-methylcarbamate; 2,3-Dihydro-2,2-dimethyl-7-benzo[b]furanyl methylcarbamate (Carbofuran)	Less than 1%
2-sec-Butylphenyl N-methylcarbamate (Fenobucarb)	Less than 1%
Methylcyclohexanol	Less than 1%
Methylcyclohexanone	Less than 1%
Methylcyclohexane	Less than 1%
2-Methylcyclopentadienyl manganese tricarbonyl; (Methylcyclopentadienyl)tricarbonylmanganese	Less than 1%
2-Methyl-4,6-dinitrophenol	Less than 0.1%
2-Methyl-3,5-dinitrobenzamide (Dinitolmide)	Less than 1%
Methyl tert-butyl ether (MTBE)	Less than 0.1%
5-Methyl-1,2,4-triazolo[3,4-b]benzothiazole (Tricyclazole)	Less than 1%
2-Methyl-4-(2-tolylazo)aniline	Less than 0.1%
2-Methyl-1-nitroanthraquinone	Less than 0.1%
Ethyl N-methyl-N-nitrosocarbamate	Less than 0.1%
Methyl n-butyl ketone	Less than 1%
Methyl n-pentyl ketone	Less than 1%
Methylhydrazine	Less than 0.1%
Methyl vinyl ketone	Less than 0.1%
1-[(2-Methylphenyl)azo]-2-naphthol (Oil Orange SS)	Less than 0.1%
Methyl propyl ketone	Less than 1%
5-Methyl-2-hexanone	Less than 1%
4-Methyl-2-pentanol	Less than 1%
2-Methyl-2,4-pentanediol	Less than 1%
2-Methyl-N-[3-(1-methylethoxy)phenyl]benzamide (Mepronil)	Less than 1%
S-Methyl N-(methylcarbamoyloxy)thioacetimidate (Methomyl)	Less than 1%
Methyl mercaptan	Less than 1%
4,4'-Methylenedianiline	Less than 0.1%
Methylenebis (4,1-cyclohexylene) diisocyanate	Less than 0.1%
Methylenebis (4,1-phenylene) diisocyanate (MDI)	Less than 0.1%
2-Methoxy-5-methylaniline	Less than 0.1%
1-(2-Methoxy-2-methylethoxy)-2-propanol	Less than 1%
Mercaptoacetic acid	Less than 0.1%
Molybdenum and its compounds	Less than 1%
Morpholine	Less than 1%
Methyl iodide	Less than 1%
Iodine	Less than 0.1%
Iodoform	Less than 1%
Dimethyl sulfide	Less than 1%
Hydrogen sulfide	Less than 1%

Sodium hydrosulfide	Less than 1%
Sodium sulfide	Less than 1%
Phosphorus sulfide	Less than 1%
Sulfuric acid	Less than 1%
Diisopropyl sulfate	Less than 0.1%
Diethyl sulfate	Less than 0.1%
Dimethyl sulfate	Less than 0.1%
Hydrogen phosphide	Less than 1%
Phosphoric acid	Less than 1%
Di-n-butyl phosphate	Less than 1%
Di-n-butyl phenyl phosphate	Less than 1%
1,2-Dibromo-2,2-dichloroethyl dimethyl phosphate (Naled)	Less than 0.1%
Dimethyl (E)-1-(N,N-dimethylcarbamoyl)-1-propen-2-yl phosphate; (E)-2-Dimethylcarbamoyl-1-methylvinyl dimethyl phosphate (Dicrotophos)	Less than 1%
Dimethyl (E)-1-(N-methylcarbamoyl)-1-propen-2-yl phosphate; (E)-1-Methyl-2-(methylcarbamoyl)vinyl dimethyl phosphate (Monocrotophos)	Less than 1%
Dimethyl 1-methoxycarbonyl-1-propen-2-yl phosphate (Mevinphos)	Less than 1%
Tri (o-tolyl) phosphate	Less than 1%
Tris (2,3-dibromopropyl) phosphate	Less than 0.1%
Tri-n-butyl phosphate	Less than 1%
Triphenyl phosphate	Less than 1%
Resorcinol	Less than 0.1%
Hexachlorobutadiene	Less than 0.1%
Rhodium and its compounds	Less than 0.1%
Rosin	Less than 0.1%
Rotenone	Less than 1%

Remarks Substances Excluded from Dangerous Goods and Harmful Substances Subject to Notifying Their Names Out of the preparations and other substances containing nitroglycerin, those desensitized with desensitizing agent having a nonvolatility of 98% or more, and containing nitroglycerin of less than 0.1%.

Appended Table 3 (Re: Article 41)

Division of Work	Persons Eligible to Engage in the Work
Work set forth in Article 20, item (i) of the Order	(i) a person who has obtained a blasting operator's license (ii) a person who has the explosives handling and safety engineer's license set forth in Article 31 of the Explosives Control Act

	(iii) a person who has passed any of the examinations for Class A senior safety engineers, Class B senior safety engineers, Class D senior safety engineers, Class A blasting technician, Class B blasting technician, Class A junior surface safety technician, Class D junior surface safety technician, Class A junior pit safety technician, Class B junior pit safety technician and Class D junior pit safety technician conducted in accordance with the provisions of the Ordinance on National Examinations for Safety Engineering Personnel (Ministry of International Trade and Industry Order No. 72 of 1950, hereinafter referred to as "previous Ordinance on National Examinations for Safety Engineering Personnel") before abolition pursuant to the provisions of Article 2 of the Supplementary Provisions of Enforcement Ordinance of the Mine Safety Act (Order of the Ministry of Economy, Trade and Industry No. 96 of 2004)
Work set forth in Article 20, item (ii) of the Order	A person who has obtained a ship lifting appliance operator's license
Out of the work set forth in Article 20, item (iii) of the Order, work other than those listed in the following column	A person who has obtained any of the special class boiler operator's license, class-1 boiler operator's license, or class-2 boiler operator's license
Out of the work set forth in Article 20, item (iii) of the Order, the work of handling the boilers set forth in Article 20, item (v), (a) through (d) of the Order	(i) a person who has obtained any of the special class boiler operator's license, class-1 boiler operator's license, or class-2 boiler operator's license (ii) a person who has completed the skill training course for operation of boilers
Out of the work set forth in Article 20, item (iv) of the Order, the work other than those listed in the following column	A person who has obtained a special boiler welder's license

Out of the work set forth in Article 20, item (iv) of the Order, the welding work in the case that the part to be welded has the thickness of 25 mm or less or in the case of connecting nozzles, flanges, etc.	A person who has obtained a special boiler welder's license or ordinary boiler welder's license
Work set forth in Article 20, item (v) of the Order	A person who has obtained a boiler maintenance-person's license
Out of the work set forth in Article 20, item (vi) of the Order, the work other than those listed in the following column	A person who has obtained a crane or derrick operator's license
Out of the work set forth in Article 20, item (vi) of the Order, the work that involves the operation of the type of crane operated by an operator who is on the floor and moves together with the movement of the lifted load	(i) a person who has obtained a crane or derrick operator's license (ii) a person who has completed a skill training course for operation of floor operated cranes
Out of the work set forth in Article 20, item (vii) of the Order the work other than those listed in the following column	A person who has obtained a mobile crane operator's license
Out of the work set forth in Article 20, item (vii) of the Order, the work for operating a mobile crane with a lifting capacity of less than 5 tons	(i) a person who has obtained a mobile crane operator's license (ii) a person who has completed the skill training course for operation of light capacity mobile cranes
Work set forth in Article 20, item (viii) of the Order	A person who has obtained a crane or derrick operator's license
Work set forth in Article 20, item (ix) of the Order	A person who has obtained a diver's license
Work set forth in Article 20, item (x) of the Order	(i) a person who has obtained the license of an operations chief of gas welding (ii) a person who has completed the skill training course of gas welding

	(iii) other persons specified by the Minister of Health, Labour and Welfare
Work set forth in Article 20, item (xi) of the Order	(i) a person who has completed the skill training course for operation of forklifts (ii) a person who has completed the training (excluding the training conducted by correspondence) of the lifting and transporting machine operation-type stevedore course prescribed in the column for training courses of the Appended Table 2 of the Enforcement Ordinance on the Human Resources Development and Promotion Act, among the basic training or the ability redeveloping training which are the statutory training under Article 27, paragraph (1) of the Human Resources Development and Promotion Act, and underwent the training pertaining to a forklift (iii) other persons specified by the Minister of Health, Labour and Welfare
Out of the work set forth in Article 20, item (xii) of the Order, the work of operating a construction machine listed in the Appended Table 7, item (1) or item (2) of the Order	(i) a person who has completed the skill training course for the operation of vehicle-type construction equipment (for leveling ground, transportation, loading and excavating) (ii) a person who has passed the examination for construction technique using construction machines prescribed in Article 27-3 of the Enforcement Order of the Construction Industry Act (Cabinet Order No. 273 of 1956) (excluding the persons specified by the Minister of Health, Labour and Welfare) (iii) a person who has completed the training (excluding the training conducted by correspondence) of the construction machines operation course listed in the column for training courses of the Appended Table 4 of the Enforcement Ordinance on the Human Resources Development and Promotion Act, among the basic training or the ability redeveloping training which are the statutory training under Article 27, paragraph (1) of the Human Resources Development and Promotion Act (iv) other persons specified by the Minister of Health, Labour and Welfare

<p>Out of the works set forth in Article 20, item (xii) of the Order, the work of operating a construction machine listed in the Appended Table 7, item (3) of the Order</p>	<p>(i) a person who has completed the skill training course for the operation of vehicle-type construction equipment (for leveling ground, transportation, loading and excavating)</p> <p>(ii) a person who has passed the examination for construction technique using construction machines prescribed in Article 27-3 of the Enforcement Order of the Construction Industry Act (Cabinet Order No. 273 of 1956) (excluding the persons specified by the Minister of Health, Labour and Welfare)</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>
<p>Out of the work set forth in Article 20, item (xii) of the Order, the work of operating a construction machine listed in the Appended Table 7, item (6) of the Order</p>	<p>(i) a person who has completed the skill training course for the operation of vehicle-type construction equipment (for dismantlement)</p> <p>(ii) a person who has passed the examination for construction technique using construction machines prescribed in Article 27-3 of the Enforcement Order for the Construction Industry Act (excluding the persons specified by the Minister of Health, Labour and Welfare)</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>
<p>Work set forth in Article 20, item (xiii) of the Order</p>	<p>(i) a person who has completed the skill training course for the operation of shovel loaders, etc.</p> <p>(ii) a person who has completed the training (excluding the training conducted by correspondence) of the lifting and transporting machine operation-type stevedore course prescribed in the column for training courses of the Appended Table 2 of the Enforcement Ordinance on the Human Resources Development and Promotion Act, among the basic training or the ability redeveloping training which are the statutory training under Article 27, paragraph (1) of the Human Resources Development and Promotion Act, and underwent the training pertaining to a shovel loaders, etc.</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>

Work set forth in Article 20, item (xiv) of the Order	(i) a person who has completed the skill training course for the operation of transporting vehicle on rough terrain (ii) a person who has passed the examination for construction technique using construction machines prescribed in Article 27-3 of the Enforcement Order for the Construction Industry Act (excluding the persons specified by the Minister of Health, Labour and Welfare) (iii) other persons specified by the Minister of Health, Labour and Welfare
Work set forth in Article 20, item (xv) of the Order	(i) a person who has completed the skill training course for the operation of vehicle for work at height (ii) other persons specified by the Minister of Health, Labour and Welfare
Work set forth in Article 20, item (xvi) of the Order	(i) a person who has completed the skill training course in slinging (ii) a person who has completed the training (excluding the training conducted by correspondence) of slinger training course listed in the column for training courses of the Appended Table 4 of the Enforcement Ordinance on the Human Resources Development and Promotion Act, among the basic training or the ability redeveloping training which are the statutory training under Article 27, paragraph (1) of the Human Resources Development and Promotion Act (iii) other persons specified by the Minister of Health, Labour and Welfare

Appended Table 4 (Re: Article 62)

Class-1 Health Officer's License	(i) a person who has passed the license examination for class-1 health officer (ii) a person who has completed and graduated from a medical course of a university or technical college under the School Education Act (iii) a person who has majored in and graduated from a course on health and hygiene and has completed a course or a subject on industrial health of a university under the School Education Act (iv) other persons specified by the Minister of Health, Labour and Welfare
Class-2 Health Officer's License	(i) a person who has passed the license examination for class-2 health officer (ii) other persons specified by the Minister of Health, Labour and Welfare

Health Officer's License on Industrial Hygiene	(i) a person who has completed and graduated from a engineering or a science course of a university or a technical college under the School Education Act, and has completed a course specified by the Minister of Health, Labour and Welfare (ii) other persons specified by the Minister of Health, Labour and Welfare
Operations Chief of Work in Pressurized Chamber License	A person who has passed the license examination for operations chief of work in pressurized chamber
Operations Chief of Gas Welding License	(i) a person who has passed the license examination for operations chief of gas welding (ii) a person who has completed the plastic processing or welding course listed in the column for the training course of the Appended Table 9 of the Enforcement Ordinance of the Human Resource Development and Promotion Act, among those training courses for instructors set forth in Article 27, paragraph (1) of the same Act, conducted by the Human Resource Development and Promotion University under the Human Resource Development and Promotion Act (iii) other persons specified by the Minister of Health, Labour and Welfare
Operations Chief of Forestry Cableway License	(i) a person who has passed license examination for operations chief of forestry cableway (ii) a person who has majored in and graduated from a course or a subject on skyline logging cable cranes and logging cableways of a university or a technical college under the School Education Act and has experience of having been engaged in the work of forestry cableway for one year or longer thereafter (iii) a person who has majored in and graduated from a course or a subject on skyline logging cable cranes and logging cableways of a senior high school or a secondary education school under the School Education Act and has experience of having been engaged in the work of forestry cableway for three years or longer thereafter (iv) other persons specified by the Minister of Health, Labour and Welfare

Special Class Boiler Expert's License	<p>(i) a person who has experience of having handled boilers (excluding boilers listed in Article 20, item (v), (a) through (d) of the Order and small sized boilers; hereinafter the same applies in this column) for five years or longer after having obtained Class-1 boiler expert's license, or a person who has experience of having served as an operations chief of boiler for three years or longer after having received the license, and has passed the license examination for special class boiler expert</p> <p>(ii) a person listed in Article 101, item (i), (b) or (c) of the Boiler Ordinance, and who has passed the license examination for special class boiler expert</p>
Class-1 Boiler Expert's License	<p>(i) a person who has experience of having handled boilers for two years or longer after having obtained Class-2 boiler expert's license or has experience of having served as a operation chief of boiler for one year or longer after having received the license, and has passed the license examination for class-1 boiler experts</p> <p>(ii) a person listed in Article 101, item (ii), (b) and (c) of the Boilers Ordinance, and who has passed the license examination for class-1 boiler expert</p>
Class-2 Boiler Expert's License	<p>(i) a person who has passed the license examination for class-2 boiler expert</p> <p>(ii) a person specified in Article 97, item (iii), (b) and © of the Boilers Ordinance</p>
Operations Chief of Radiography with X-rays License	<p>(i) a person who has passed the license examination for operations chief of radiography with X-rays</p> <p>(ii) a person listed in each item of Article 48 of the Ionization Ordinance</p>
Operations Chief of Radiography with Gamma Rays License	<p>(i) a person who has passed the license examination for operations chief of radiography with gamma-rays</p> <p>(ii) a person listed in each item of Article 52-4 of the Ionization Ordinance</p>
Operations Chief of Work for Handling Specified Class-1 Pressure Vessel License	A person listed in each item of Article 119, paragraph (1) of the Boiler Ordinance
Blasting Operator's License	(i) a person who has passed the license examination for blasting operator

	(ii) a person who has majored in and graduated from a subject on applied chemistry, mine engineering or civil engineering of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has engaged in the practical training on blasting work for one year or longer thereafter
Cargo Lifting Appliance Operator's License	<p>(i) a person who has passed the license examination for cargo lifting appliance operator</p> <p>(ii) a person who has passed the academic test of the license examination for cargo lifting appliance operator, and who has completed the practical training course for cargo lifting appliance operation within one year from the day when the test was conducted</p> <p>(iii) a person who has completed the training of the lifting and transporting machine operation-type crane operation course or the lifting and transporting machine operation-type stevedore course prescribed in the column for training courses of the Appended Table 2 of the Ordinance on the Human Resources Development and Promotion Act, or the training (excluding the training conducted by correspondence) of the crane operation course or the stevedore course listed in the column for training courses of the Appended Table 4 of the same Ordinance, among the basic training or the ability redeveloping training which are the statutory training of Article 27, paragraph (1) of the Human Resources Development and Promotion Act, and underwent the training pertaining to cargo lifting appliance</p> <p>(iv) other persons specified by the Minister of Health, Labour and Welfare</p>
Special Class Boiler Welder's License	A person who has passed the license examination for special class boiler welders
Ordinary Class Boiler Welder's License	<p>(i) a person who has passed the license examination for ordinary class boiler welders</p> <p>(ii) a person who may be exempted from all subjects of the academic test and all the practical skill tests of the license examination for ordinary class boiler welders</p>
Boiler Maintenance Technician's License	A person who has passed the license examination for boiler maintenance technician
Crane/Derrick Operator's License	<p>(i) a person who has passed a license examination for crane or derrick operators</p> <p>(ii) a person listed in Article 223, items (ii) through (vi) of the Cranes Ordinance</p>

Mobile Crane Operator's License	(i) a person who has passed a license examination for mobile crane operators (ii) a person listed in Article 229, items (ii) through (v) of the Cranes Ordinance
Diver's License	A person who has passed a license examination for diving workers

Appended Table 5 (Re: Article 70)

(i) license examination for class-1 health supervisors;

Eligibility for Examination	Examination Subjects	Eligibility for Exemption from Examination Subjects	Subjects Exempted from Examination
(i) a person who has graduated from a university or a technical college under the School Education Act, and has practical business experience of having been engaged in the field of occupational health for one year or longer thereafter (ii) a person who has graduated from a senior high school or a secondary school under the School Education Act, and has practical business experience of having been engaged in the field of occupational health for three years or longer thereafter (iii) a person who has obtained the certificate of competency for health officers set forth in Article 82-2, paragraph (3) of the Seamen Act (Act No. 100 of 1947), and has practical business experience of having been engaged in the field of occupational health for one year or longer thereafter (iv) other persons specified by the Minister of Health, Labour and Welfare	Examination of academic subjects (a) occupational health (b) occupational physiology (c) related laws and regulations	(i) a person listed in item (iii) of the column for the eligibility for examination (ii) a person who has obtained the Class-2 health supervisor's license	occupational physiology

(i)-2 license examination for class-2 health supervisors;

Eligibility for Examination	Examination Subjects	Eligibility for exemption from examination subjects	Subjects Exempted from Examination
<p>(i) a person who has graduated from a university or a technical college under the School Education Act, and has practical business experience of having been engaged in the field of occupational health work for one year or longer thereafter</p> <p>(ii) a person who has graduated from a senior high school or a secondary school under the School Education Act, and has practical business experience of having been engaged in the field of occupational health work for three years or longer thereafter</p> <p>(iii) a person who has obtained the certificate of competency of health supervisor set forth in Article 82-2, paragraph (3) of the Seamen Act, and has practical business experience of having been engaged in the field of occupational health for one year or longer thereafter</p> <p>(iv) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Examination of academic subjects</p> <p>(a) occupational health</p> <p>(b) occupational physiology</p> <p>(c) related laws and regulations</p>	<p>A person listed in item (iii) of the column for the eligibility for examination</p>	<p>Occupational physiology</p>

(ii) license examination for operations chief of gas welding;

Eligibility for Examination	Examination Subjects	Eligibility for Exemption from Examination Subjects	Subjects Exempted from Examination

<p>(i) a person who has completed a skill training course for gas welding, and has experience of having been engaged in the work of gas welding, etc., for three years or longer thereafter</p>	<p>Examination of academic subjects</p>	<p>A person listed in item (ii) to (vi) of the column for the eligibility for examination (for a person listed in item (vi), limited to a person who has passed the Class-1 skill examination)</p>	<p>(i) knowledge of acetylene welding equipment and gas welding equipment using manifolds</p>
<p>(ii) a person who has majored in and graduated from a course relating to welding of a university or a technical college under the School Education Act</p>	<p>(a) knowledge of acetylene welding equipment and gas welding equipment using manifolds</p>		<p>(ii) knowledge of acetylene and other flammable gases, carbide, and oxygen</p>
<p>(iii) a person who has majored in and graduated from a course related to engineering or chemistry of a university or a technical college under the School Education Act, and has experience of having been engaged in gas welding work for one year or longer thereafter</p>	<p>(b) knowledge of acetylene and other flammable gases, carbide, and oxygen</p>		

(iv) a person who has obtained the vocational training instructors' licenses for the type of occupation of course for plastic processing, ironwork for steel structures or piping listed in the column for the type of license in the Appended Table 11 of the Enforcement Ordinance of the Human Resource Development and Promotion Act among the licenses set forth in Article 28, paragraph (1) of the Human Resource Development and Promotion Act

(v) a person who has completed the metal processing course listed in the column for the training course for the Appended Table 2 of the Enforcement Ordinance of the Human Resource Development and Promotion Act, among the basic training or the ability redeveloping training which are the statutory training under Article 27, of paragraph (1) of the Human Resources Development and Promotion Act, and has experience of having been engaged in gas welding, etc., for two years or longer thereafter

(vi) a person who has passed the Class-1 or Class-2 trade skill test pertaining to ironwork, panel beating and sheet metal work or piping work, among the type of skill tests listed in the Appended Table of the Enforcement Order of the Human Resource Development and Promotion Act (Cabinet Order No. 258 of 1969), and has experience of having been engaged in the work of gas welding, etc., for one year or longer thereafter

(c) knowledge of the work of gas welding, etc.

(d) related laws and regulations

(vii) a person who has passed an examination for welding technicians based on the former Ordinance on National Examinations for Safety Engineering Personnel, and has experience of having been engaged in the work of gas welding, etc., for one year or longer thereafter (viii) other persons specified by the Minister of Health, Labour and Welfare			
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(iii) license examination for operations chief of forestry cableway;

Qualifications for candidacy of examination	Examination Subjects	Eligibility for Exemption from Examination Subjects	Subjects Exempted from Examination
A person who has experiences having engaged in forestry cableway operation work for three years or longer	Examination of academic subjects (a) knowledge of skyline logging cable cranes and logging cableways (b) knowledge of forestry cableway work (c) knowledge of mechanics required for forestry cableway work	A person who has completed and graduated from courses related to mechanics of a university, a technical college, a senior high school or a secondary school under the School Education Act	knowledge of mechanics required for forestry cableway work

	(d) related laws and regulations		
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(iv) license examination for blasting experts; and

Eligibility for Examination	Examination Subjects	Eligibility for Exemption from Examination Subjects	Subjects Exempted from Examination
<p>(i) a person who has majored in and graduated from courses related to applied chemistry, mine engineering or civil engineering of a university, a technical college, a senior high school or a secondary school under the School Education Act, and has completed a practical training of blasting work for three months or longer thereafter</p> <p>(ii) a person who has experience of having been engaged in the supplementary work of blasting operations for six months or longer</p> <p>(iii) a person who has completed practical training in blasting conducted by a person registered by the Director of the Prefectural Labour Bureau</p>	<p>Examination of academic subjects</p> <p>(a) knowledge of explosives</p> <p>(b) handling of explosives</p> <p>(c) method of blasting</p>		

(v) license examination for cargo lifting appliance operators.

Eligibility for Examination	Examination Subjects	Eligibility for Exemption from Examination Subjects	Subjects Exempted from Examination
	(i) examination of academic subjects	A person who has obtained the crane or derrick operator's license or mobile crane operator's license	(i) the following subjects in the examination of academic subjects

	(a) knowledge of cargo lifting appliances		(a) knowledge of prime movers and electricity
	(b) knowledge of prime movers and electricity		(b) knowledge of mechanics required for operating a cargo lifting appliance
	(c) knowledge of mechanics required for operating a cargo lifting appliance		(ii) in the practical skills test, signals for operating a cargo lifting appliance
	(d) related laws and regulations		
	(ii) practical skills test	A person who has completed the practical training course for cargo lifting appliance operations, and one year has not elapsed from the day of the completion	All of the subjects for the practical skills test
	(a) operation of a cargo lifting appliance	A person who has completed a practical skills training course for floor-operated crane operation, mobile crane operation, or slinging operation	In the practical skills test, signals for operating a cargo lifting appliance
	(b) signals for operating a cargo lifting appliance	(i) a person who has passed the examination of academic subjects in the previous license examination for cargo lifting appliance operators conducted by the Director of the Prefectural Labour Bureau (ii) a person who has passed the examination of academic subjects in the license examination for cargo lifting appliance operators conducted by the designated examination agency, and one year has not elapsed from the day of the completion	All of the subjects for the examination of academic subjects

Appended Table 6 (Re: Article 79)

Category of Skills Training Course	Eligibility for Skills Training Course	Skills Training Course Subjects
Skills training course for operations chief of wood processing machines	(i) a person who has experience of having been engaged in the work of operating wood processing machines for three years or longer (ii) other persons specified by the Minister of Health, Labour and Welfare	Academic subjects (a) knowledge of the type, structure and functions of a machine pertaining to the work and its safety device, etc. (b) knowledge of the maintenance and inspection of a machine pertaining to the work and its safety device, etc. (c) knowledge of the work method of work (d) related laws and regulations
Skills training course for operations chief of press machines	(i) a person who has experience of having been engaged in the work of operating press machines for five years or longer (ii) other persons specified by the Minister of Health, Labour and Welfare	Academic subjects (a) knowledge of the type, structure and functions of a machine pertaining to the work and its safety device, etc. (b) knowledge of the maintenance and inspection of a machine pertaining to the work and its safety device, etc. (c) knowledge of the work method (d) related laws and regulations
Skills training course for operations chief of drying equipment	(i) a person who has experience of having been engaged in the work of handling drying equipment for five years or longer	Academic subjects

	<p>(ii) a person who has majored in and graduated from a regular science course of a university or a technical college under the School Education Act, and has experience of having been engaged in the work of design, manufacturing, inspection or handling dryer equipment for one year or longer thereafter</p> <p>(iii) a person who has majored in and graduated from a regular science course of a senior high school or secondary education school under the School Education Act, and has experience of having been engaged in the work of design, manufacturing, inspection or handling of drying equipment for two years or longer thereafter</p> <p>(iv) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>(a) knowledge of the structure and handling of drying equipment and its attached facilities</p> <p>(b) knowledge of the inspection, maintenance and emergency measures of drying equipment and its attached facilities</p> <p>(c) knowledge of the management of drying work</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operations chief of concrete breaking</p>	<p>(i) a person who has experience of having been engaged in the work of concrete breaking using a concrete breaker for two years or longer</p> <p>(ii) a person who has majored in and graduated from a chemistry, a mining or a civil engineering course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of concrete breaking using a concrete breaker for one year or longer thereafter</p>	<p>Academic subjects</p> <p>(a) knowledge of gunpowder</p>

	<p>(iii) a person who has obtained a blasting operator's license, and has experiences having engaged in the work of concrete breaking using a concrete breaker or blasting for one year or longer thereafter</p> <p>(iv) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>(b) knowledge of handling a concrete breaker</p> <p>(c) knowledge of breaking method using a concrete breaker</p> <p>(d) knowledge of education, etc., for workers</p> <p>(e) related laws and regulations</p>
<p>Skills training course for operations chief of excavating natural ground and shoring</p>	<p>(i) a person who has experience of having been engaged in the work of excavating natural ground, or installing or removing struts or wales of shoring for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering, an architecture or an agricultural civil engineering course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of excavating natural ground, or in installing or removing struts or wales of shoring for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of construction facilities, machines, instruments and working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>

<p>Skills training course for operations chief of excavating tunnels</p>	<p>(i) a person who has experience of having been engaged in the work of excavating tunnel, etc., or muck loading associated with it, assembling of tunnel shoring, lock bolt fastening or work to spray concrete, etc., (referred to as "work of excavating, etc., of tunnel, etc.", in the following item) for three years or longer (ii) a person who has majored in and graduated from a civil engineering, an architecture or an agricultural civil engineering course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of excavating, etc., of tunnel, etc., for two years or longer thereafter (iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of the construction facilities, machines, instruments, working environments, etc. (c) knowledge of education, etc., for workers (d) related laws and regulations</p>
<p>Skills training course for operations chief of lining of tunnels</p>	<p>(i) a person who has experience of having been engaged in the work of lining tunnel, etc., for three years or longer</p>	<p>Academic subjects</p>

	<p>(ii) A person who has majored in and graduated from a civil engineering, an architecture or an agricultural civil engineering course of a university, a technical college, a senior high school or a secondary education school accredited under the School Education Act, and has experiences having engaged in the work of lining of tunnel, etc., for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>(a) knowledge of the work method</p> <p>(b) knowledge of construction facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operations chief of assembling concrete form shoring</p>	<p>(i) a person who has experience of having been engaged in the work related to assembling or dismantling concrete form shoring for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering or an architecture course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work related to assembling and dismantling concrete form shoring for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of construction facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p>

		(d) related laws and regulations
Skills training course for operations chief of assembling scaffolding	<p>(i) a person who has experience of having been engaged in the work related to assembling, dismantling or altering scaffolding for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering, an architecture or a shipbuilding course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work related to assembling, dismantling or altering of scaffolding for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of construction facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>
Skills training course for operations chief of assembling steel frame of buildings	<p>(i) a person who has experience of having been engaged in the work of assembling, dismantling or altering frame of buildings or towers that is composed of metallic components (referred to as "work of assembling, etc., steel frame of buildings, etc.", in the following item) for three years or longer</p>	Academic subjects

	<p>(ii) a person who has majored in and graduated from a civil engineering or an architecture course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of assembling, etc., steel frame of buildings, etc., for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>(a) knowledge of the work method</p> <p>(b) knowledge of construction facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operations chief of installing steel bridges</p>	<p>(i) a person who has experience of having been engaged in work related to installing, dismantling and altering bridge superstructures composed of metallic components (referred to as "work of installing, etc., steel bridges" in the following item) for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering or a construction course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of installing, etc., steel bridges for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of construction equipment, machines, and instruments, etc.</p>

		<p>(c) knowledge of the work environment, etc.</p> <p>(d) knowledge of education, etc., for workers</p> <p>(e) related laws and regulations</p>
<p>Skills training course for operation chief of demolition of concrete structures</p>	<p>(i) a person who has experience of having been engaged in the work of dismantling or demolishing concrete structures (referred to as "work of demolishing, etc., concrete structures" in the following item) for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering or an architecture course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of demolishing, etc., concrete structures for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the work method</p> <p>(b) knowledge of work facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operation chief of installing concrete bridges</p>	<p>(i) a person who has experience of having been engaged in the work of installing or altering concrete bridge superstructures (referred to as "work of installing, etc., concrete bridges", in the following item) for three years or longer</p>	<p>Academic subjects</p>

	<p>(ii) a person who has majored in and graduated from a civil engineering or an architecture course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of installing, etc., concrete bridges for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>(a) knowledge of the work method</p> <p>(b) knowledge of work facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operations chief of excavating work for quarrying</p>	<p>(i) a person who has experience of having been engaged in the work of excavating rocks for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering or a mining course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of excavating rocks for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of the type of rocks and the method of excavating rocks, etc., for quarrying</p> <p>(b) knowledge of facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of education, etc., for workers</p> <p>(d) related laws and regulations</p>

<p>Skills training course for operations chief of cargo piling</p>	<p>A person who has experience of having been engaged in the work of loading or breaking a cargo pile for three years or longer</p>	<p>Academic subjects</p> <p>(a) knowledge of cargo pile (meaning a mass of cargos that are piled up in a warehouse, shed or yard; the same applies hereinafter)</p> <p>(b) knowledge of the manual work of loading or breaking a cargo pile</p> <p>(c) knowledge of mechanical work required for loading or breaking a cargo piles with machine, etc.</p> <p>(d) related laws and regulations</p>
<p>Skills training course for operations chief of stevedores</p>	<p>(i) a person who has obtained a license for cargo lifting appliance operators, crane or derrick operators or mobile crane operators, and has experience of having been engaged in the work of stevedores for four years or longer thereafter</p> <p>(ii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge required for supervising work</p> <p>(b) knowledge of the structure and handling of ship facilities and cargo handling machines, etc.</p> <p>(c) knowledge of the methods of slinging and signaling</p> <p>(d) knowledge of the method of cargo handling</p> <p>(e) related laws and regulations</p>

<p>Skills training course for operations chief of assembling wooden buildings</p>	<p>(i) a person who has experience of having been engaged in the work of assembling construction components of wooden buildings or work of mounting roof and exterior wall backings associated with the work (referred to as "work of assembling, etc., construction components" in the following item) for three years or longer</p> <p>(ii) a person who has majored in and graduated from a civil engineering or an architecture course of a university, a technical college, a senior high school or a secondary education school under the School Education Act, and has experience of having been engaged in the work of assembling, etc., construction components for two years or longer thereafter</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>	<p>Academic subjects</p> <p>(a) knowledge of assembling of construction components and mounting of roof backings, etc., of wooden buildings</p> <p>(b) knowledge of construction facilities, machines, instruments, working environments, etc.</p> <p>(c) knowledge of the education, etc., for workers</p> <p>(d) related laws and regulations</p>
<p>Skills training course of gas welding</p>		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of facilities used for the work of gas welding, etc.</p> <p>(b) knowledge of flammable gas and oxygen used for the work of gas welding, etc.</p> <p>(c) related laws and regulations</p> <p>(ii) practical skills training</p>

		Handling of the facilities used for the work of gas welding, etc.
Skills training course of forklift operation		<p>(i) academic subjects</p> <p>(a) knowledge of structure and operating method of devices related to traveling</p> <p>(b) knowledge of structure and operating method of the devices related to cargo handling</p> <p>(c) knowledge of mechanics required for the operation</p> <p>(d) related laws and regulations</p> <p>(ii) practical skills training</p> <p>(a) operation for traveling</p> <p>(b) operation for cargo handling</p>
Skills training course for the operation of shovel-loader		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of devices related to traveling</p> <p>(b) knowledge of structure and handling of devices related to cargo handling</p> <p>(c) knowledge of mechanics required for operation</p> <p>(d) related laws and regulations</p> <p>(ii) practical skills training</p> <p>(a) operation for traveling</p> <p>(b) operation for cargo handling</p>

<p>Skills training course for the operation of vehicle-type construction machines (for leveling ground, transport, loading and excavating)</p>		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of devices related to traveling (b) knowledge of the structure and handling of devices related to the work and the work method (c) knowledge of general matters required for the operation (d) related laws and regulations</p> <p>(ii) practical skills training (a) operation for traveling (b) operation of devices for the work</p>
<p>Skills training course for the operation of vehicle-type construction machines (for demolition)</p>		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of devices related to traveling (b) knowledge of the structure and handling of device related to the work and the work method (c) knowledge of general matters required for the operation (d) related laws and regulations</p> <p>(ii) practical skills training (a) operation for traveling (b) operation of devices for the work</p>

<p>Skills training course for the operation of vehicle-type construction machines (for foundation work)</p>		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of devices related to traveling (b) knowledge of the structure and handling of devices related to the work and the work method (c) knowledge of general matters required for operating (d) related laws and regulations</p> <p>(ii) practical skills training (a) operation for traveling (b) operation of devices for the work and signaling</p>
<p>Skills training course for operation of transporting vehicle on rough terrain</p>		<p>(i) academic subjects</p> <p>(a) knowledge of structure and handling method of devices related to traveling (b) knowledge of transporting cargo (c) knowledge of mechanics required for the operation (d) related laws and regulations</p> <p>(ii) practical skills training (a) operation for traveling (b) operation for transporting cargo</p>
<p>Skills training course for operation of vehicle for work at height</p>		<p>(i) academic subjects</p>

		(a) knowledge of structure and handling method of devices related to the work (b) knowledge of prime movers (c) knowledge of general matters required for the operation (d) related laws and regulations (ii) practical skills training Operation of devices for the work
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Appended Table 6-2 (Re: Article 84-2)

- (i) work concerning generation, transmission, transformation, distribution or storage of electricity;
- (ii) work of melting, refining or heat treating metals;
- (iii) work of welding or cutting metals;
- (iv) work of manufacturing glass;
- (v) work concerning dry distillation of coal, lignite, asphalt, pitch wood or resin; or distillation and refining of tar;
- (vi) work using drying equipment;
- (vii) work of manufacturing, refining, or handling oils and fats, wax or paraffin;
- (viii) work of spraying or baking paints;
- (ix) work of manufacturing or handling compressed gas or liquefied gas;
- (x) work manufacturing or handling gunpowder, explosives or priming materials;
- (xi) work of manufacturing or handling dangerous goods; or manufacturing or handling substances whose flash point is 65 degrees or higher at a temperature higher than the flash point; and
- (xii) work listed in Article 13, paragraph (1), item (ii) (excluding work listed in sub-item (j) of the same item)

Appended Table 7 (Re: Articles 86 and 88)

Type of Machines	Items	Drawings, etc.
(i) power presses (limited to mechanical presses with an eccentric mechanism such as crank-shaft, and hydraulic presses)	(i) type	(i) structural drawing or catalog of power presses

	<p>(ii) pressure capability</p> <p>(iii) length of stroke</p> <p>(iv) stopping performance</p> <p>(v) type of changeover switch</p> <p>(vi) for mechanical press with eccentric mechanisms such as crankshafts:</p> <p>(a) model of the clutch</p> <p>(b) model of the brake</p> <p>(c) number of strokes per minute</p> <p>(d) die height</p> <p>(e) amount of slide adjustment</p> <p>(f) setting position of overrun monitoring equipment</p> <p>(g) number of engagements of clutch</p> <p>(vii) for hydraulic presses:</p> <p>(a) the maximum descending speed of the slide</p> <p>(b) inertial descending value</p> <p>(viii) outline of use:</p> <p>(a) use</p> <p>(b) stroke</p>	<p>(ii) for the power press that has passed the model examination, a copy of the conformity sticker of the model examination</p> <p>(iii) for the power press equipped with a safety device, a copy of the conformity sticker for paasing the model examination and structural drawings or catalogs of the safety device</p> <p>(iv) for the power presses other than those listed in the preceding two items, drawing or catalog showing the outline of the safety device</p>
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	<p>(c) processing</p> <p>(ix) outline of safety devices</p> <p>(x) performance for those with a system for preventing danger due to the slide</p>	
<p>(ii) melting furnaces for metals and other minerals (limited to those with capacity of 1 ton or more)</p>	<p>(i) type, model, name of manufacturer, and the year of manufacture</p> <p>(ii) type and properties of metals and other minerals handled</p> <p>(iii) method of heating</p> <p>(iv) standard amount of charge, temperature, pressure, and other use conditions</p> <p>(v) structure, material and main dimensions</p> <p>(vi) structure, material, and main dimensions of the cooling equipment, oxygen blowing equipment, pits and other main attached facilities</p>	<p>(i) structural drawing of the melting furnace and its main attached facilities</p> <p>(ii) drawing showing the outline of surrounding area of the installation place</p>
<p>(iii) chemical facilities (excluding piping, and those for which the amount of dangerous goods manufactured or handled or substance with flash points of 65 °C or higher manufactured or handled are below the standards specified by the Minister of Health, Labour and Welfare)</p>	<p>(i) type, model, and functions</p>	<p>Arrangement plan and structural drawings of the chemical facilities, the main attached facilities, and piping</p>

	<p>(ii) names and properties of the dangerous goods manufactured or handled, or of substances with flash points of 65 °C or higher manufactured or handled</p> <p>(iii) standard amount of charge, temperature, pressure, and other use conditions</p> <p>(iv) structure, material, and main dimension</p> <p>(v) structure, material, and main dimensions of the main attached facilities and piping</p>	
<p>(iv) drying equipment (limited to those set forth in Article 6, item (viii), (a) or (b) of the Order)</p>	<p>(i) type, model, capability, name of manufacturer, and the year of manufacture</p> <p>(ii) type and properties of substances to be dried</p> <p>(iii) method of heating</p> <p>(iv) temperature, pressure and other use conditions</p> <p>(v) structure, material, and main dimensions</p> <p>(vi) functions, structure, material, and main dimensions of ventilation system, temperature measuring apparatus, temperature adjusting apparatus and other main attached facilities</p>	<p>(i) structural drawing</p> <p>(ii) drawing showing the outline of the surrounding area of the installation place</p>

<p>(v) acetylene welding equipment (excluding mobile types)</p>	<p>(i) structure, material, and main dimensions of floor area, wall, roof, ceiling, door of entrances and exits of the generator room and exhaust pipe, and number of welding equipment installed in the generator room (ii) type, model, name of manufacturer, the year of manufacture of the generator (iii) type, model, name of manufacturer, the year of manufacture, number, structure, material, and main dimensions of the safety equipment (iv) name, structure, material, and main dimensions of the purifier and its accessories (v) structure and capacity of the sludge pit of carbide</p>	<p>(i) arrangement plan (ii) structural drawings of the generator and safety equipment (iii) structural drawing of the generator room (iv) drawing showing the outline of the surrounding area of the installation place</p>
<p>(vi) gas welding equipment using manifold (excluding mobile types)</p>	<p>(i) structure and main dimensions of the gas manifold room, name of the gas to be stored, and the maximum gas storage capacity (ii) structure and main dimensions of gas manifold (iii) type, model, name of the manufacturer, the year of manufacturer, number, structure, material, and main dimensions of the safety equipment (iv) name, structure, material, and main dimensions of the piping, valves and other accessories</p>	<p>(i) arrangement plan (ii) structural drawing of the safety equipment (iii) structural drawing of the gas manifold room (iv) drawing showing the outline of the surrounding area of the installation place</p>

<p>(vii) skyline logging cable cranes (limited to those having prime mover with rated power output exceeding 7.5 kW)</p>	<p>(i) rope reeving system</p> <p>(ii) the maximum working load</p> <p>(iii) slope distance, inclined angle, and central dangling ratio of effective spans</p> <p>(iv) structure and diameters of the main cable and work rope</p> <p>(v) safety coefficient of the main cable and work rope (to attach a strength calculation document)</p> <p>(vi) type, rated power output, and the maximum traction force of yarder</p> <p>(vii) period of installation</p>	<p>Arrangement plan</p>
<p>(viii) logging cableway (limited to those with the total slope distance of the effective span of 350 m or more)</p>	<p>(i) type</p> <p>(ii) the maximum working load and clearance between carriers</p> <p>(iii) total slope distance of the effective span</p> <p>(iv) slope distance, inclined angle, and central dangling ratio of the longest effective span</p> <p>(v) structure and diameters of the main cable and towing rope</p> <p>(vi) safety coefficient of the main cable and towing rope (to attach a strength calculation document)</p>	<p>arrangement plan</p>

	(vii) for those power driven, type and rated power output of the cableways (viii) period of installation	
(ix) railway equipment	(i) purpose of use (ii) positions of the starting point and ending point, and their difference of altitude (average gradient) (iii) length of the rail tracks (iv) the minimum radius of curvature and steepest gradient (v) gauge of the rail tracks, distinction of single or double track, and weight of the rail (vi) length, width, and structure of the bridge or landing pier (vii) type, number, model, weight, traction force, and main dimensions of power cars (viii) model, capability, and main dimensions of the winch (ix) type and function of the brake (x) conditions of signaling, warning device, and illuminating apparatus (xi) the maximum operation speed	When it is not possible to indicate the matters listed in the middle column in writing, to attach a plane view, a cross sectional view and structural drawing, etc., pertaining to the matters

	(xii) installation place and structure of anchoring device (xiii) for those installed underground, relationship between the railway equipment and its surroundings	
(x) concrete form shoring (limited to those having a support with the height of 3.5 m or higher)	(i) outline of the concrete structure to be placed (ii) structure, material, and main dimension (iii) period of installation	Assembly drawing and arrangement plan
(xi) temporary passages (limited to those with the length and width of 10 m or more respectively)	(i) installation place (ii) structure, material, and main dimensions (iii) period of installation	Plane view, side view and cross sectional view
(xii) scaffoldings (limited to those having height of 10 m or higher for those other than hanging scaffoldings and cantilever scaffoldings)	(i) installation place (ii) type and purpose of use (iii) structure, material, and main dimensions	Assembly drawing and arrangement plan
(xiii) facilities to keep airtight emission sources of organic solvent vapour, local exhaust ventilation, push-pull type ventilation systems, or general ventilation systems set forth in Article 5 or Article 6 of the Organic Solvent Ordinance (excluding mobile types)	(i) outline of the organic solvent work (meaning the work listed in Article 1, paragraph (1), item (vi) of the Organic Solvent Ordinance; hereinafter the same applies in this column)	(i) drawing of facilities, etc.

	<p>(ii) outline of machines or facilities that is an emission source of vapor of organic solvent (meaning organic solvents listed in the Appended Table 6-2 of the Order; hereinafter the same applies in this column)</p> <p>(iii) method of controlling emissions of organic solvent vapour</p> <p>(iv) for facilities to keep the emission source of organic solvent airtight, an outline of the method for keeping the facilities airtight and structure of the main part of the facilities</p> <p>(v) for a general ventilation system, the model, outline of the structure of the main part of the system and its function</p>	<p>(ii) drawing of the workplace where organic solvent work is to be carried out</p> <p>(iii) for local exhaust ventilation, a local exhaust ventilation specification document (Form No. 25)</p> <p>(iv) for push-pull ventilation system, a push-pull ventilation system specification document (Form No. 26)</p>
<p>(xiv) facilities to keep airtight emission sources of dust from lead, etc., or sintered ore, etc., local exhaust ventilation or push-pull type ventilation systems prescribed in Article 2, Articles 5 through 15, and Articles 17 through 20 of the Lead Ordinance</p>		<p>(i) drawing of facilities, etc.</p>

	<p>(ii) outline of machines or facilities that is an emission source of dust of lead, etc., (meaning the lead listed in Article 1, item (i) of the Lead Ordinance; hereinafter the same applies in this column) or sintered ore, etc., (meaning the sintered ore listed in item (ii) of the same Article; hereinafter the same applies in this column)</p> <p>(iii) method of controlling emissions of dust of lead, etc., or sintered ore, etc.</p> <p>(iv) for facilities to keep the emission source of dust of lead, etc., or sintered ore, etc., airtight, an outline of the method for keeping the facilities airtight and the structure of the main part of the facilities</p>	<p>(ii) drawing of the workplace where lead work is to be carried out</p> <p>(iii) for local exhaust ventilation, a local exhaust ventilation specification document (Form No. 25)</p> <p>(iv) for push-pull ventilation system, a push-pull ventilation system specification document (Form No. 26)</p>
<p>(xv) machines or equipment used for the work listed in the Appended Table 5, item (ii) of the Order (hereinafter referred to as "work" in this column)</p>	<p>(i) outline of the work</p> <p>(ii) outline of machines or facilities that are emission sources of vapour of tetraalkyl lead (meaning the tetraalkyl lead set forth in the Appended Table 5, item (i) of the Order; the same applies in this column)</p>	<p>(i) drawing of machines and devices to be used in the work</p> <p>(ii) drawing of the workplace where the work is to be carried out</p>

	<p>(iii) amount of gasoline containing tetraalkyl lead handled</p> <p>(iv) models of machines or devices used in the work and outline of the structure of their main part and its functions</p> <p>(v) provision of personal protective equipment and antiseptics, etc.</p> <p>(vi) outline of washing facilities</p>	
<p>(xvi) facilities to manufacture class-1 substances listed in Article 2, paragraph (1), item (i) of the Specified Chemicals Ordinance (hereinafter referred to as "class-1 substances" in this column) or specified class-2 substances set forth in Article 4, paragraph (1) of the Specified Chemicals Ordinance (hereinafter referred to as "specified class-2 Substances, etc." in this column)</p>	<p>(i) outline of the work of manufacturing class-1 substances or specified class-2 substances, etc.</p> <p>(ii) outline of the structure of the main structural part</p> <p>(iii) outline of method for keeping the facilities airtight and measures to prevent health impediment when having workers handle the substances</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) structure of the building where facilities that manufacture class-1 substances or specified class-2 substances, etc., is to be installed</p> <p>(iii) drawing showing the layout of facilities that manufacture class-1 substances or specified class-2 substances, etc.</p> <p>(iv) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p>

		(v) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)
(xvii) specified chemical facilities set forth in Article 9-3, item (ii) of the Order (hereinafter referred to as "specified chemical facilities" in this column) and their attached facilities	<p>(i) outline of the work of manufacturing or handling specified class-2 substances (meaning the substances listed in Article 2, paragraph (1), item (iii) of the Specified Chemicals Ordinance; hereinafter the same applies in this column and the following column) or class-3 substances (meaning substances listed in the Appended Table 3, item (iii) of the Order)</p> <p>(ii) outline of the structure of the main structural part</p> <p>(iii) outline of the structure of attached facilities</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) structure of the building where specified chemical facilities are installed</p> <p>(iii) drawing showing the layout of specified chemical facilities and attached facilities</p> <p>(iv) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(v) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>

<p>(xviii) emission control facilities installed in an indoor workshop where gas, vapour or dust of specified class-2 substances or controlled class-2 substances listed in Article 2, paragraph (1), item (v) of the Specified Chemical Ordinance (hereinafter referred to as "controlled class-2 substances" in this column) is released</p>	<p>(i) outline of the work of manufacturing or handling of specified class-2 substances or controlled class-2 substances</p> <p>(ii) for facilities to keep the emission source of gas, vapour or dust of specified class-2 substances or class-2 substances airtight, an outline of the method for keeping the source airtight and the structure of the main structural part and its functions</p> <p>(iii) for general ventilation systems, the model, outline of the structure of the main structural part, and its function</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing showing the whole workplace</p> <p>(iii) drawing of facilities or general ventilation systems that keep the emission source of gas, vapour, or dust of specified class-2 substances or class-2 substances airtight</p> <p>(iv) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(v) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>
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<p>(xix) exhaust gas treatment devices set forth in Article 10, paragraph (1) of the Specified Chemicals Ordinance pertaining to acrolein</p>	<p>(i) outline of the work of manufacturing or handling of acrolein</p> <p>(ii) treatment method of exhaust gas and the treatment capability</p> <p>(iii) outline of the structure of the main structural part</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing of the structure of exhaust gas treatment devices</p> <p>(iii) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(iv) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>
<p>(xx) waste liquid treatment system set forth in Article 11, paragraph (1) of the Specified Chemicals Ordinance</p>	<p>(i) outline of the work of waste liquid treatment</p> <p>(ii) method of waste liquid treatment and the treatment capability</p> <p>(iii) outline of the structure of the main structural part</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing of the structure of the waste liquid treatment system</p> <p>(iii) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(iv) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>

<p>(xxii) air conditioning facilities or mechanical ventilation systems managed in a centralized manner set forth in Article 5 of the Ordinance on Health Standards in the Office (Ministry of Labour Order No. 43 of 1972)</p>	<p>(i) air disposal method</p> <p>(a) air purification method (b) dehumidifying and moisturizing method (c) humidifying method (d) cooling method (ii) ventilation capability (iii) the type and capability of the ventilator or the exhauster (iv) the structure of the main structural part (v) the system used for supplying or discharging air (vi) summary of facility inspection</p>	<p>When it is not possible to indicate the matters listed in the middle column in writing, structural drawing, piping arrangement plan, etc., pertaining to the matters</p>
<p>(xxiii) machine or facility with an emission source of specified dust listed in the Appended Table 2, item (vi) and item (viii) of the Dust Ordinance and mould breaking equipment set forth in item (xiv) of the same Table</p>	<p>(i) outline of the dust work (meaning the dust work set forth in Article 2, paragraph (1), item (i) of the Dust Ordinance; the same applies hereinafter)</p> <p>(ii) type, name, capability, number of machines or facilities, and the method for preventing dispersal of dust</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing showing the layout of the main machines and facilities in the workshop</p>

	<p>(iii) when using facilities to keep the emission source of dust airtight as the method for preventing dispersal of dust, the method of keeping the source airtight, outline of the structure of the main structural part, and its functions</p> <p>(iv) when using a method other than the method under the preceding item and that using local exhaust ventilation for preventing dispersal of dust, the model, outline of the structure of the main structural part of the facilities for preventing dispersal of dust and its capability</p>	<p>(iii) drawing showing the structure of facilities other than a local exhaust ventilation for preventing dispersal of dust</p>
<p>(xxiv) local exhaust ventilation or push-pull type ventilation system installed pursuant to the provisions of Article 4 or the proviso of Article 27, paragraph (1) of the Dust Ordinance</p>	<p>Outline of the dust work</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing showing the layout of the main machines or facilities in the workshop</p> <p>(iii) when local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(iv) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>

<p>(xxv) emission control facilities installed in an indoor workshop where dust of asbestos are released</p>	<p>(i) outline of the work of handling asbestos or of manufacturing asbestos for test and research</p> <p>(ii) for facilities to keep the emission source of asbestos dust airtight, the method for keeping the source airtight, outline of the structure of the main structural part and its functions</p> <p>(iii) for general ventilation systems, the model, outline of the structure of the main structural part and its function</p>	<p>(i) drawing showing the surrounding situation and the relationship with the surrounding areas</p> <p>(ii) drawing showing the whole workplace</p> <p>(iii) drawing of facilities or the general ventilating system to keep the emission source of asbestos dust airtight</p> <p>(iv) when a local exhaust ventilation has been installed, a local exhaust ventilation specification document (Form No. 25)</p> <p>(v) when a push-pull ventilation system has been installed, a push-pull ventilation system specification document (Form No. 26)</p>
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Appended Table 8
Deleted

Appended Table 9 (Re: Article 92-3)

Classification of Construction Work or Work	Qualifications
<p>Work pertaining to the machine, etc., listed in the left column of the Appended Table 7, item (x)</p>	<p>(i) a person who falls under both of the following sub-items (a) and (b):</p> <p>(a) a person who falls under any of the following provisions:</p>

	<p>1. a person who has practical business experience of having been engaged in design supervision or execution supervision of construction work pertaining to concrete form shoring for three years or longer;</p> <p>2. a person who has passed the examination for class-1 architects set forth in Article 12 of the Architect Act (Act No. 202 of 1950);</p> <p>3. a person who has passed the examination for class-1 engineering work execution process supervisors or class-1 building work process supervisors prescribed in Article 27-3 of the Enforcement Order of the Construction Industry Act;</p> <p>(b) a person who has practical business experience of having been engaged in the field of safety and health in construction work for three years or longer or have completed the training course conducted by a person who has been registered by the Minister of Health, Labour and Welfare;</p> <p>(ii) a person who has passed the examination for the industrial safety consultant in the category of civil engineering or building construction; and</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare.</p>
<p>Work pertaining to the machine, etc., listed in the left column of the Appended Table 7, item (xii)</p>	<p>(i) a person who falls under both of the following sub-items (a) and (b):</p> <p>(a) a person who falls under any of the following provisions:</p> <p>1. a person who has practical business experience of having been engaged in design supervision or execution supervision of construction work pertaining to scaffolding for three years or longer;</p> <p>2. a person who has passed the examination for class-1 architects set forth in Article 12 of the Architect Act;</p> <p>3. a person who has passed the examination for class-1 engineering work execution supervisors or class-1 building work execution supervisors prescribed in Article 27-3 of the Enforcement Order of the Constructors Act;</p>

	<p>(b) a person who has practical business experience of having been engaged in the field of safety and health in construction work for three years or longer or have completed the training course conducted by a person who has been registered by the Minister of Health, Labour and Welfare;</p> <p>(ii) a person who has passed the examination for industrial safety consultants in the category of civil engineering or building construction;</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare;</p>
<p>Construction work, out of the work listed in Article 89-2, item (i) and Article 90, item (i) (excluding dam construction work)</p>	<p>(i) a person who falls under both of the following sub-items (a) and (b):</p> <p>(a) a person who falls under any of the following provisions:</p> <ol style="list-style-type: none"> 1. a person who has completed and graduated from a regular scientific courses of a university or technical college under the School Education Act, and has practical business experience of having been engaged in the design supervision or execution supervision of construction work for ten years or longer thereafter; 2. a person who has completed and graduated from a regular scientific courses of a high school or a secondary school under the School Education Act, and has practical business experience of having been engaged in the design supervision or execution supervision of construction work for fifteen years or longer thereafter; 3. a person who has passed the examination for the class-1 architects prescribed in Article 12 of the Architect Act; <p>(b) a person who has practical business experience of having been engaged in the field of safety and health in construction work for three years or longer or has completed the training conducted by a person who has been registered by the Minister of Health, Labour and Welfare;</p> <p>(ii) A person who has passed the examination for industrial safety consultant in the category of building construction.</p> <p>(iii) other persons specified by the Minister of Health, Labour and Welfare</p>

<p>Work listed in Article 89-2, items (ii) through (vi) and Article 90, items (i) through (v) (limited to dam construction work for the work listed in item (i) of the same Article, and limited to construction work for the work listed in item (ii), item (ii)-2, and item (iii) of the same Article)</p>	<p>(i) a person who falls under all of the following subitems (a) through (c);</p> <p>(a) a person who falls under any of the following provisions:</p> <ol style="list-style-type: none"> 1. a person who has completed and graduated from a regular scientific course of a university or a technical college under the School Education Act, and has practical business experience of having been engaged in design supervision or execution supervision of civil engineering work for ten years or longer thereafter; 2. a person who has completed and graduated from a regular scientific course of a senior high school or a secondary school under the School Education Act, and has experience of having been engaged in design supervision or execution supervision of civil engineering work for fifteen years or longer thereafter; 3. To have passed the second examination for consultant engineers in the category of construction work prescribed by paragraph (1) of Article 4 of the Consultant Engineers Act (Act No. 25 of 1983). 4. a person who has passed the examination for class-1 engineering work execution process supervisors or class-1 building work process supervisors prescribed in Article 27-3 of the Enforcement Order of the Construction Industry Act; <p>(b) a person who has practical business experience of having been engaged in design supervision or execution supervision of the following work in accordance with the categories of work listed in each of the following provisions :</p> <ol style="list-style-type: none"> 1. dam construction work out of the work set forth in Article 89-2, item (ii) and Article 90, item (i): dam construction work
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2. construction work out of the work set forth in Article 89-2, item (iii) and Article 90, items (ii) and (ii)-2: bridge construction work

3. construction work out of the work set forth in Article 89-2, item (iv) and item (v) and Article 90, item (iii): construction work of tunnels, etc.

4. work set forth in Article 89-2, item (vi) and Article 90, item (v): work of carrying out operations by the compressed air method;

5. work set forth in Article 90, item (iv): work of carrying out excavation of natural ground

(c) a person who has practical business experience of having been engaged in the field of safety and health in construction work for three years or longer or have completed the training conducted by a person who has been registered by the Minister of Health, Labour and Welfare;

(ii) a person who has passed the examination for industrial safety consultant in the category of civil engineering;

(iii) other persons specified by the Minister of Health, Labour and Welfare.