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Ordinance for Technical Specifications pertaining to Fire Extinguishers
(Ordinance of the Ministry of Home Affairs No. 27 of September 17, 1964)

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In accordance with the provision of Article 21-2(2) of the Fire Service Act (Act No. 186 of 1948), the Ordinance for Technical Specifications pertaining to Fire Extinguishers shall consist of the following parts.

Chapter 1 General Provisions (Articles 1 and 1-2)
Chapter 2 Fire Extinguishers other than Residential Fire Extinguishers (Articles 2 to 38)
Chapter 3 Residential Fire Extinguishers (Articles 39 to 45)
Chapter 4 Replaceable Fire Extinguishers (Articles 46 to 52)
Chapter 5 Miscellaneous Provisions (Article 53)
Supplementary Provisions

Chapter 1 General Provisions

Purport

Article 1 This Ordinance covers the technical specifications applicable to fire extinguishers.

Definitions

Article 1-2 In this Ordinance, the meanings of the terms listed in the following items shall be as prescribed respectively in those items.

(i) Fire extinguisher: The equipment that discharges water or any other fire extinguishing agent (hereinafter referred to as “fire extinguishing agent”) under pressure to extinguish a fire and will be operated by a person. (Fire extinguishers shall include those appliances that may be operated by a person after the connection of the storage container (refers to the container that has nozzle, hose, and safety relief device, and other components and houses the extinguisher cylinder containing fire extinguishing agent, as well as cap, valve, pressure gauge installed to the cylinder, and the like; the same shall apply hereinafter); but shall exclude the appliances used in stationary state or the aerosol type convenient fire extinguishers specified by the Commissioner of the Fire and Disaster Management Agency.)

- (ii) Residential fire extinguisher: The fire extinguisher that has the structure and performance designed only for residential applications.
- (iii) Replaceable fire extinguisher: The fire extinguisher that may be replaced with new one composed of extinguisher cylinder, cap, valve, pressure gauge, and other components as one unit and, when connected to the storage container, will extinguish a fire under the operation by a person.
- (iv) Water fire extinguisher: The fire extinguisher that discharges the water (including the water to which the infiltration agent or the like prescribed in Article 8 of the Ordinance for Technical Specifications pertaining to Fire Extinguishing Agents for Fire Extinguishers (Ordinance of the Ministry of Home Affairs No. 28 of 1964; hereinafter referred to as “Fire Extinguishing Agents Technical Specifications Ordinance”) (hereinafter referred to as “infiltration agent, etc.”) is mixed or added) under pressure to extinguish a fire.
- (v) Acid-alkali fire extinguisher: The fire extinguisher that discharges the acid-alkali fire extinguishing agent prescribed in Article 2 of the Fire Extinguishing Agents Technical Specifications Ordinance (including the fire extinguishing agent to which the infiltration agent, etc. is mixed or added) under pressure to extinguish a fire.
- (vi) Loaded stream fire extinguisher: The fire extinguisher that discharges the loaded stream fire extinguisher agent prescribed in Article 3 of the Fire Extinguishing Agents Technical Specifications Ordinance (including the fire extinguishing agent to which the infiltration agent, etc. is mixed or added) under pressure to extinguish a fire.
- (vii) Foam fire extinguisher: The fire extinguisher that discharges the foam concentrate prescribed in Article 4 of the Fire Extinguishing Agents Technical Specifications Ordinance (including the fire extinguishing agent to which the infiltration agent, etc. is mixed or added) under pressure to extinguish a fire.
- (viii) Halogenated fire extinguisher: The fire extinguisher that discharges the halogenated fire extinguishing agent prescribed in Article 6 of the Fire Extinguishing Agents Technical Specifications Ordinance under pressure to extinguish a fire.
- (ix) Carbon dioxide fire extinguisher: The fire extinguisher that discharges the liquefied carbon dioxide under pressure to extinguish a fire.
- (x) Powder fire extinguisher: The fire extinguisher that discharges the dry chemical agent prescribed in Article 7 of the Fire Extinguishing Agents Technical Specifications Ordinance (including the fire extinguishing agent to which the infiltration agent, etc. is mixed or added) under pressure to extinguish a fire.
- (xi) Gas cartridge operated fire extinguisher: The fire extinguisher that discharges the fire extinguishing agent by utilizing the operation of the expellant gas cylinder, the action of the chemical reaction, or the operation of the hand pump.
- (xii) Stored-pressure extinguisher: The fire extinguisher that discharges the fire extinguishing agent

with the help of the pressure of the gas compressed in the extinguisher cylinder, such as air or nitrogen, (hereinafter referred to as “compressed gas”) or the pressure of the fire extinguishing agent changed in the fire extinguisher.

(xiii) Class A fire: The fire other than the Class B fire specified in the next item.

(xiv) Class B fire: The fire caused by the class 4 dangerous objects listed in the appended table of the Fire Service Act (Act No. 186 of 1948) and the combustible solids and liquids listed in Appended Table 4 of the Cabinet Ordinance concerning Control of Dangerous Objects (Cabinet Order No. 306 of 1959).

Chapter 2 Fire Extinguishers other than Residential Fire Extinguishers

Rating

Article 2 Fire extinguishers (refer to the fire extinguishers other than residential fire extinguishers (except for replaceable fire extinguishers); hereinafter the same shall apply in this Chapter) shall have the rating of not less than 1 when it is measured in accordance with the provisions in Article 3 or 4. However, this rating shall be 10 or more in case of wheeled extinguisher designed for the Class A fire and 20 or more in case of those designed for the Class B fire.

Measurement of rating

Article 3 The rating of the fire extinguisher against the Class A fire shall be measured in the first fire test.

(2) The first fire test prescribed in the preceding paragraph shall be implemented as specified in Items (i) to (vi) below, and the judgment on test results shall be provided as specified in Item (vii) below.

(i) The following type 1 or type 2 model shall be used. However, two or more type 2 models shall not be used in the test.

(ii) The models shall be arranged as illustrated below depending on the following items.

(a) When using S pieces of type 1 models (“S” takes any value; hereinafter the same shall apply in this Article)

(b) When using S pieces of type 1 models and one type 2 model

(iii) In combustion pans, pour 3.0 L of automotive gasoline, which conforms to JIS (refers to the Japanese Industrial Standards prescribed in Article 17(1) of the Industrial Standardization Law (Act No. 185 of 1949); the same shall apply hereinafter) K 2202 for the type 1 model and 1.5 L for the type 2 model. Ignite the gasoline in pans one after another. In case of Item (ii)(b), start igniting the type 1 model pans.

(iv) Commence the fire extinguishing 3 min after the ignition of first model. Execute the fire

extinguishing in the order of ignition. If the afterflame is observed on the extinguished model, do not commence the fire extinguishing for the next model.

(v) The operator of the fire extinguisher shall not wear fire preventive clothing.

(vi) The test shall be implemented in no-wind condition (refers to the condition where the wind velocity is 0.5 m/s or less; the same shall apply hereinafter).

(vii) When the afterflame is not observed after the complete discharge of the fire extinguishing agent and the models are not reignited within 2 min from the completion of discharge, such a judgment shall be provided that the fire of those models is completely extinguished.

(3) The rating of the fire extinguisher against the Class A fire after the first fire test implemented in accordance with the provisions in the preceding paragraph shall be determined as follows: S multiplied by 2 for the fire extinguisher that has completely extinguished S pieces of burning type 1 models; and S multiplied by 2 plus 1 for the fire extinguisher that has completely extinguished S pieces of burning type 1 models and one type 2 model.

Article 4 The rating of the fire extinguisher against the Class B fire shall be measured in the second and third fire tests.

(2) The second fire test prescribed in the preceding paragraph shall be implemented as specified in Items (i) to (iv) below and the judgment on test results shall be provided as specified in Item (v) below.

(i) Models shall have geometries specified in (a) below. Models whose number is 1 or larger among those listed in (b) below shall be used. For each model to be tested, the quantity shall be 1

(a) Geometry of model

Figure (Omitted)

(b) Variation of model

Model number	Burned surface area, m ²	L, cm
0.5	0.1	31.6
1	0.2	44.7
2	0.4	63.3
3	0.6	77.5
4	0.8	89.4
5	1.0	100.0
6	1.2	109.5
7	1.4	118.3
8	1.6	126.5
9	1.8	134.1

10	2.0	141.3
12	2.4	155.0
14	2.8	167.4
16	3.2	178.9
18	3.6	189.7
20	4.0	200.0

(ii) Commence the fire extinguishing 1 min after the ignition of the model.

(iii) The operator of the fire extinguisher shall not wear fire preventive clothing.

(iv) The test shall be implemented in no-wind condition.

(v) When the models are not reignited within 1 min from the complete discharge of the fire extinguishing agent, such a judgment shall be provided that the fire of those models is completely extinguished.

(3) The third fire test prescribed in Paragraph (1) shall be implemented as specified in Items (i) to (vi) below and the judgment on test results shall be provided as specified in Item (vii) below.

(i) The models specified in Items (i)(a) and (i)(b) of the preceding paragraph shall be used. These models shall be of such models that their model numbers are equal to or smaller than 1/2 of the numbers of the models whose fire was completely extinguished by the fire extinguisher used in the second fire test. Moreover, the number of models to be tested shall range from 2 to 5.

(ii) Arrange the models in the descending order of the model number, starting from the model with the largest number, in a line on a plane. The interval between the adjacent two models shall be not less than the length of the edge of the model with larger number.

(iii) Ignite the models starting from the model with the larger number one after another without any pause.

(iv) Commence the fire extinguishing 1 min after the ignition of first model. Execute the fire extinguishing in the order of ignition.

(v) The operator of the fire extinguisher shall not wear fire preventive clothing.

(vi) The test shall be implemented in no-wind condition.

(vii) When the models are not reignited within 1 min from the complete discharge of the fire extinguishing agent, such a judgment shall be provided that the fire of those models is completely extinguished.

(4) For the fire extinguisher against the Class B fire after the second and third fire tests implemented in accordance with the provisions in Paragraphs (2) and (3), the rating shall be determined as an arithmetic average of the sum of the model numbers with successful extinguishing in the second fire test and those in the third fire test. In this case, if the subject arithmetic average has a fraction of decimal number, the fraction shall be discarded.

Operation mechanism

Article 5 Fire extinguishers shall be capable of commencing the discharge easily and certainly in a single action (not more than two actions for chemical foam fire extinguishers (those foam fire extinguishers in which foams are generated by the chemical reaction of the fire extinguishing agent; the same shall apply hereinafter), stationary fire extinguishers (those fire extinguishers that are stationarily installed on the floor and allow the operator to grasp the nozzle and deploy the hose (except for the wheeled devices); the same shall apply hereinafter), and back-carrying fire extinguishers (those fire extinguishers the operator carries on his/her back by using back straps or the like; the same shall apply hereinafter); or not more than three actions for wheeled extinguishers (those fire extinguishers equipped with wheels for transportation); the same shall apply hereinafter). In this case, those actions necessary to remove the fire extinguisher from its holder, carry the extinguisher on operator’s back, remove the safety relief device, and deploy the hose shall be excluded.

(2) Fire extinguishers shall be capable of commencing the discharge by using any of the operating methods identified by a circle in the following table in accordance with the device classification specified in that table. However, this shall not apply to stationary, back-carrying, and wheeled extinguishers.

Classification of fire extinguisher		Operating method				
		Grasp the lever	Strike the push piece	Place the fire extinguisher upside down	Open the cover and place the fire extinguisher upside down	Move up and down the handle
Water fire extinguisher	Extinguisher operated with hand pump					○
	Others	○				
Acid-alkali fire extinguisher		○	○			
Loaded stream fire extinguisher	Extinguisher whose rating for Class A or B fire exceeds 1	○				

	Others	○	○			
Foam fire extinguisher		○		○	○	
Halogenated fire extinguisher (except for carbon tetrachloride fire extinguisher; the same shall apply hereinafter), carbon dioxide fire extinguisher	Extinguisher whose rating for Class B fire exceeds 1	○				
	Extinguisher whose rating for Class B fire is 1					
Powder fire extinguisher	Extinguisher whose mass of fire extinguishing agent exceed 1 kg	○				
	Others	○	○			

(3) For controls of the fire extinguisher, such as safety relief device, handle, lever, and pushbutton, their operating methods shall be indicated at easily observable place in such a manner that the subject information may not be readily erased.

Corrosion resistance and rust prevention

Article 6 Fire extinguishers shall be made of high-quality materials. The portions that contact the fire extinguishing agent charged shall be made of the material unsusceptible to the agent (hereinafter referred to as “corrosion-resistant material”). Otherwise, corrosion-resistant treatment shall be arranged to the subject portions. The portions exposed to the external atmosphere shall be made of rust-preventive material. Otherwise, rust-preventive treatment shall be arranged to the subject portions.

(2) When fire extinguishers are subjected to the corrosion test, where the portions that contact the fire extinguishing agent charged is immersed in 3-% sodium chloride aqueous solution for 14 days, and the corrosion tests prescribed in the following table in accordance with the device classification specified in that table, the subject agent-contacting portions shall be free from rust and any other troubles. However, the corrosion test may be omitted for the fire extinguishers whose agent-contacting portions are made of corrosion-resistant material.

Classification of fire extinguisher	Corrosion test
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Fire extinguisher containing alkaline fire extinguishing agent	Immerse the target portions in 3-% sodium hydroxide aqueous solution for 14 days.
Fire extinguisher containing alkaline fire extinguishing agent	Immerse the target portions in 3-% sulfuric acid for 14 days.

(3) Fire extinguishers where the corrosion-resistant coating has been executed for the portions that contact the fire extinguishing agent charged shall meet the performance requirements prescribed in the following table when test pieces identical to the coated portions are subjected to the tests specified in that table.

Classification of test	Performance
Bending test	When a flat test piece is bent over a 10-mm diameter bar through 180° in a second with the coated surface facing outward, the coating shall not be cracked or flaked on the bent test piece except for the area within 10 mm of each edge of the material.
Impact test	When a flat test piece is fixed to a steel bench with the coated surface facing upward, a 25-mm diameter steel ball is mounted to the end of the 300-g weight, the ball and weight assembly is positioned at a level 50 cm above the coated surface with the steel ball facing downward, and the assembly is dropped onto the coated surface, the coating shall not be cracked or flaked. The material of the steel ball used in this test shall conform to JIS B 1501.
Corrosion test	When the corrosion test prescribed in the preceding paragraph is implemented, the coating shall be free from flaking, swelling, rusting, dissolution, discoloration, or extreme change in luster except for the area within 10 mm of each edge of the test piece.

Fire extinguishing agents

Article 7 Fire extinguishing agents charged in fire extinguishers (except for water and carbon dioxide fire extinguishers) shall meet the requirements prescribed in Articles 1-2 to 8 of the Fire Extinguishing Agents Technical Specifications Ordinance.

(2) The water charged in water fire extinguishers shall be of purified substance that does not have corrosiveness or toxicity and does not generate corrosive or toxic gasses.

(3) The fire extinguishing agents charged in carbon dioxide fire extinguishers shall be of class 2 or 3 liquefied carbon dioxide conforming to JIS K 1106.

Automotive fire extinguishers

Article 8 Fire extinguishers installed in motor vehicles (hereinafter referred to as “automotive fire extinguishers”) shall be of loaded stream fire extinguishers (limited to those that spray the loaded

stream agent), mechanical foam fire extinguishers (refer to other foam fire extinguishers than chemical foam fire extinguishers; the same shall apply hereinafter), halogenated fire extinguishers, carbon dioxide fire extinguishers, or powder fire extinguishers.

Fire extinguishing agents for wheeled extinguishers

Article 9 The volume/mass of the fire extinguishing agent charge in wheeled extinguishers shall be 80 L or more for water and chemical foam fire extinguishers, 20 L or more for mechanical foam fire extinguishers, 60 L or more for loaded stream fire extinguishers, 30 kg or more for halogenated fire extinguishers, 50 kg or more for carbon dioxide fire extinguishers, and 20 kg or more for powder fire extinguishers.

Discharge performance

Article 10 Fire extinguishers shall meet the following items when the fire extinguishing agent is discharged by using the normal operating method.

- (i) As soon as the pre-discharge sequence is completed, the agent shall be discharged effectively.
- (ii) The discharge time shall be not less than 10 s at 20°C.
- (iii) The fire extinguisher shall offer effective discharge distance necessary to extinguish a fire.
- (iv) The fire extinguisher shall be capable of discharging not less than 90% of the charged agent volume or mass (not less than 85% for chemical foam fire extinguishing agent).

Service temperature range

Article 10-2 When fire extinguishers are operated in either of the following temperature ranges determined by the device classification (for the fire extinguishers that may be still operated without trouble and discharge the fire extinguishing agent effectively even when the temperature range is extended by every 10°C, such extended temperature ranges are applied; hereinafter referred to as “service temperature range”), the operator shall be able to normally operating the subject fire extinguishers and effectively discharging the fire extinguishing agent.

- (i) Chemical foam fire extinguisher: 5°C to 40°C
- (ii) Other fire extinguishers: 0°C to 40°C

Wall thickness of extinguisher cylinder

Article 11 The extinguisher cylinders of the fire extinguishers prescribed in the following table shall be of rugged devices with wall thickness equal to or larger than the values specified in that table.

Classification of fire extinguisher			Wall
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			thickness, mm
Extinguisher cylinder of gas cartridge operated fire extinguisher (except for water fire extinguisher operated with hand pump) or stored-pressure extinguisher	Material conforming to JIS G 3131 or any of other materials having equivalent or higher corrosion resistance	Inside diameter: 120 mm or more	1.2
		Inside diameter: Less than 120 mm	1.0
	Material conforming to JIS H 3100 or G 4304 or any of other materials having equivalent or higher corrosion resistance	Inside diameter: 100 mm or more	1.0
		Inside diameter: Less than 100 mm	0.8
Extinguisher cylinder of water fire extinguisher operated with hand pump			0.6

Pressure bearing performance of extinguisher cylinder

Article 12 The pressure bearing performance of the extinguisher cylinder (pump for the water fire extinguisher operated with hand pump; hereinafter the same shall apply in this Article) shall meet the following items.

(i) When hydraulic pressures prescribed in the following table are applied to respective extinguisher cylinders for 5 min in accordance with the classification specified in that table, the cylinders shall not generate water leak and permanent strain harmful to its mechanical strength (or the permanent strain equal to or larger than 0.5% of the circumference for the cylindrical area).

Classification of extinguisher cylinder				Pressure
Extinguisher cylinder of gas cartridge operated fire extinguisher	Extinguisher cylinder with shut-off nozzle (including the mechanism through which the fire extinguishing agent is delivered to the nozzle is of shut-off type; the same shall apply hereinafter)	Extinguisher cylinder made of corrosion-sensitive material (refers to other material than corrosion-resistant material; the same shall apply hereinafter)	Extinguisher cylinder without safety valve	$P \times 2.0$
			Extinguisher cylinder with safety valve	$P \times 1.6$
		Extinguisher cylinder made of	Extinguisher	$P \times 1.6$

		corrosion-resistant material	cylinder without safety valve	
			Extinguisher cylinder with safety valve	$P \times 1.3$
Extinguisher cylinder with other nozzle than shut-off nozzle	Extinguisher cylinder made of corrosion-sensitive material		Extinguisher cylinder without safety valve	$P \times 1.5$
			Extinguisher cylinder with safety valve	$P \times 1.2$
	Extinguisher cylinder made of corrosion-resistant material		Extinguisher cylinder without safety valve	$P \times 1.2$
			Extinguisher cylinder with safety valve	$P \times 1.0$
Extinguisher cylinder of stored-pressure extinguisher	Extinguisher cylinder made of corrosion-sensitive material		Extinguisher cylinder without safety valve	$Q \times 2.0$
			Extinguisher cylinder with safety valve	$Q \times 1.6$
	Extinguisher cylinder made of corrosion-resistant material		Extinguisher cylinder without safety valve	$Q \times 1.6$
			Extinguisher	$Q \times 1.3$

		cylinder with safety valve	
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(ii) Extinguisher cylinders without safety valve shall meet the requirements in the preceding item. In addition, when hydraulic pressures prescribed in the following table are applied to these extinguisher cylinders for 5 min in accordance with the classification specified in that table, the cylinders shall not generate cracking or rupture.

Classification of extinguisher cylinder			Pressure
Extinguisher cylinder of gas cartridge operated fire extinguisher	Extinguisher cylinder with shut-off nozzle	Extinguisher cylinder made of corrosion-sensitive material	$P \times 2.7$
		Extinguisher cylinder made of corrosion-resistant material	$P \times 2.1$
	Extinguisher cylinder with other nozzle than shut-off nozzle	Extinguisher cylinder made of corrosion-sensitive material	$P \times 2.0$
		Extinguisher cylinder made of corrosion-resistant material	$P \times 1.6$
Extinguisher cylinder of stored-pressure extinguisher		Extinguisher cylinder made of corrosion-sensitive material	$Q \times 3.0$
		Extinguisher cylinder made of corrosion-resistant material	$Q \times 2.4$

(2) In tables shown in the items of the preceding paragraph, P and Q represent the following pressures (unit is megapascal).

(i) P

(a) Extinguisher cylinders of gas cartridge operated fire extinguishers and fire extinguishers with pressure regulator: Maximum regulated pressure

(b) Other extinguisher cylinders than those specified in (a): Maximum choke pressure under the assumption that the temperature inside the extinguisher cylinder is 40°C (maximum temperature for the fire extinguishers whose service temperature range exceeds 40°C). In this case, for the water fire extinguisher operated with hand pump, the maximum choke pressure shall be measured by applying the force of 700 N to the extinguisher.

(ii) Q: For extinguisher cylinders of stored-pressure extinguishers, this quantity shall be the upper limit of the green-marked service pressure zone on the pressure gauge prescribed in Article 28 under

the assumption that the temperature inside the cylinder is 40°C (maximum temperature for the fire extinguishers whose service temperature range exceeds 40°C).

Air-tightness of stored-pressure extinguishers

Article 12-2 When the stored-pressure extinguisher is tested with fire extinguishing agent charged, the compressed gas and agent shall not leak. The test sequence is as follows: leave the fire extinguisher at the upper limit of the service temperature range for 24 h and leave it at the lower limit of the range for 24 h; repeat this cycle 3 times; and leave it in the air of 20°C for 24 h.

Caps, plugs, mouthpieces, and packings

Article 13 Caps, plugs, mouthpieces, and packings of fire extinguishers shall meet the following items.

- (i) A packing shall be engaged to the cap or plug and mouthpiece so that these components will not come off during the operation of the fire extinguisher.
- (ii) When the cap or plug is tested as prescribed in Article 12(1)(i), the component shall not generate leak and extreme deformation.
- (iii) The connection of the cap or plug with the packing installed shall provide certain engagement. Also, the cap or plug shall engage with their mouthpieces in such a manner that the connection of the component sufficiently bears the pressures prescribed in the table of Article 12(1)(i) in accordance with the extinguisher cylinder classification specified in that table.
- (iv) The cap, plug, or mouthpiece shall be equipped with effective pressure reduction hole or groove capable of completely decreasing the pressure in the extinguisher cylinder while the cap or plug is being removed in order to, for example, charge the fire extinguishing agent. In this case, the cap or plug shall be capable of bearing the pressure in the extinguisher cylinder until the pressure reduction process is completed.
- (v) The packing shall endure the attack of the fire extinguishing agent charged and, when the fire extinguisher is used within the service temperature range, shall not affect the functions of the subject extinguisher.

Valves

Article 14 Valves of fire extinguishers shall meet the following items.

- (i) When valves, except for those specified in the following paragraph, are tested as prescribed in Article 12(1)(i), they shall not generate leak and extreme deformation.
- (ii) Valves operated with handwheel shall be fully opened after not more than 1¼ rotations of handwheel.
- (iii) When the valve is opened, it shall not be disassembled or separated.

(2) Stored-pressure extinguishers and extinguishers' expellant gas cylinders (except for the cylinders equipped with pressure isolation disc) controlled by the High Pressure Gas Safety Act (Act No. 204 of 1951) shall be equipped with the valve controlled by the Act (hereinafter referred to as "cylinder valve"). This cylinder valve shall meet the following items.

(i) The valve box shall be made of the material conforming to JIS H 3250 or any of other materials having equivalent or higher mechanical strength and corrosion resistance.

(ii) Valve boxes installed to carbon dioxide fire extinguishers or expellant gas cylinders containing carbon dioxide: When the valve box is tested by applying the hydraulic pressures of 24.5 MPa to the valve box for 5 min, it shall not generate water leak and extreme deformation.

Valve boxes installed to other devices: When the valve box is tested by applying the hydraulic pressure, which is equal to the pressure bearing test pressure (refers to the pressure specified in Article 2(xv) of the Vessel Security Rules (Ordinance of the Ministry of International Trade and Industry No. 50 of 1966; the same shall apply hereinafter)) of the cylinder to which the cylinder valve is installed, to the valve box for 5 min, it shall not generate water leak and extreme deformation.

(iii) When the cylinder valve is tested by applying the gaseous pressure, which is equal to the internal pressure generated when the temperature of the gas inside the cylinder equipped with this valve is 40°C, to the cylinder valve for 5 min, it shall not generate leak and extreme deformation.

(iv) A safety valve shall be installed.

Hoses

Article 15 Hoses shall be installed to fire extinguishers. However, this shall not apply to halogenated fire extinguishers whose mass of fire extinguishing agent is less than 4 kg or powder fire extinguishers whose mass of fire extinguishing agent is less than 1 kg.

(2) Fire extinguisher hoses shall meet the following items.

(i) When hoses are tested as prescribed in Article 12(1)(i), they shall not generate water leak and extreme deformation.

(ii) The length of the hose shall be enough to effectively discharge the fire extinguishing agent (for stationary fire extinguishers, the effective length (the effective length refers to the one achieved when the hose is deployed to the limit while maintaining the effective use of the hose; the same shall apply hereinafter) shall be not less than 10 m).

(iii) The hose shall be durable within the service temperature range and designed for smooth operation.

(iv) The hose that will be deployed to extinguish a fire shall be free from deformation, cracking, and other troubles as a result of deployment.

Nozzles

Article 16 Neither shut-off unit nor selector shall be installed to the nozzles of the fire extinguishers (except for wheeled extinguishers). However, the shut-off unit may be installed to the nozzles of the stationary and back-carrying fire extinguishers.

(2) Fire extinguisher nozzles shall meet the following items.

(i) When the nozzle is tested as prescribed in Article 12(1)(i), it shall not generate water leak and extreme deformation.

(ii) The inside surface shall be finished smoothly.

(iii) The shut-off or selectable nozzle shall provide smooth shut-off or selection sequence and be free from leak of fire extinguishing agent or other troubles during the discharge task.

(iv) When the shut-off nozzle is tested by applying the pressure of 0.3 MPa, it shall not generate leak.

(v) The plugged open nozzle shall not generate leak within the service temperature range and, when the fire extinguishers is operated, shall be capable of discharging the fire extinguishing agent without fail.

Filtration screens

Article 17 For water fire extinguishers operated with hand pump, acid-alkali or loaded stream fire extinguishers with glass bottle, or chemical foam fire extinguishers, the filtration screen that meets the following items shall be installed to the agent lead-out tube (or the nozzle for the fire extinguishers without this agent lead-out tube), which is going to the nozzle or hose, at the opening in the extinguisher cylinder.

(i) The maximum mesh size of the filtration screen shall be not more than 3/4 of the minimum nozzle diameter.

(ii) The total area of the screen mesh shall be at least 30 times the minimum cross section of the nozzle opening.

Filling indication

Article 18 For water fire extinguishers operated with hand pump, acid-alkali fire extinguishers, and chemical foam fire extinguishers, a simple and clear mark showing the level of the fire extinguishing agent charged shall be indicated on the inside surface of each extinguisher cylinder.

Impact strength, etc.

Article 19 Fire extinguishers shall be made of high-quality and durable materials that sufficiently endure the force generated by unexpected dropping, impact, and other events during the transportation and operation.

Prevention of leak of fire extinguishing agent

Article 20 Fire extinguishers shall be equipped with leak protection device so that the fire extinguishing agent charged will not leak as a result of temperature elevation, vibration, and other events. However, this shall not apply to those fire extinguishers having leak-free structural design.

Safety relief device

Article 21 Fire extinguishers shall be equipped with safety relief device to prevent unexpected operation. However, this shall not apply to water fire extinguishers operated with hand pump and extinguishers operated by a single action of turnover.

(2) The safety relief device shall be readily pulled out by a single action. In addition, it shall be protected by the seal that will not disturb the pull-out.

(3) For handheld fire extinguishers (those extinguishers operated by holding in hand; the same shall apply hereinafter), except for the extinguishers that will be operated by a single action of striking the push piece and be operated by opening the cover and executing the turnover action, and stationary fire extinguishers, the safety relief device shall meet the following items in addition to those provided in the preceding paragraph.

(i) The safety relief device shall consist of a ring with inside diameter of not less than 2 cm, a rod, and a bearing.

(ii) After the safety relief device is installed to the fire extinguisher, the ring shall lie on the line along which the rod is pulled out from the through-hole of the upper lever.

(iii) The ring shall be painted in yellow.

(iv) The safety relief device shall be made of SUS304 stainless steel specified in JIS G 4309 or any of other materials having equivalent or higher corrosion resistance and durability.

(v) The safety relief device shall be installed in such a manner that it will be pulled out in the upward direction (refers to the range within 30° from the vertical axis when the fire extinguisher is placed on a horizontal surface).

(vi) Even when impact force is applied to the safety relief device or the lever is grasped strongly, the device shall be certainly pulled out.

(vii) The safety relief device shall be pulled out only by the specified pull-out action.

Indication of used fire extinguisher

Article 21-2 Handheld fire extinguishers (except for stored-pressure extinguishers with pressure gauge, fire extinguishers without valve, and water fire extinguishers operated with hand pump) shall be equipped with the device that will automatically work upon operation of the fire extinguisher and notify that the subject extinguisher has been already used.

Holder

Article 22 Handheld fire extinguishers (except for automotive fire extinguishers) shall be equipped with a holder that keeps them stable. However, this shall not apply to those fire extinguishers that may stand upright.

(2) The holder shall have such structural design that the fire extinguisher may be easily detached from it.

Stability of stationary fire extinguishers

Article 22-2 Stationary fire extinguishers shall have such structural design that they may keep stable condition during various scenes, including the deployment of hose.

Carrying or transportation aid

Article 23 Fire extinguishers whose mass is 28 kg or less shall be of handheld, stationary, or back-carrying type. Fire extinguishers whose mass is more than 28 kg and not less than 35 kg shall be of stationary, wheeled, or back-carrying type. Fire extinguishers whose mass exceeds 35 kg shall be of wheeled type. Here, the mass quoted in this Article shall be calculated by deducting the mass of the holder and back strap or wheels from the mass of the fire extinguisher package.

(2) The handle, back strap, or wheels used to carry or transport the fire extinguisher shall be rugged and have such dimensions and geometries that the extinguisher may be properly carried/transported and operated.

Safety valves

Article 24 Safety valves of fire extinguishers shall meet the following items.

- (i) The safety valve shall be capable of effectively reducing the pressure in the extinguisher cylinder.
- (ii) The safety valve shall be protected from unauthorized disassembly or adjustment.
- (iii) Mount screws prescribed in the following paragraph shall conform to JIS B 0202 and, after the packings are installed, shall certainly engage with the target portions.
- (iv) For the pressure isolation disc type safety valve, the discharge port shall be sealed.
- (v) The indication "Safety valve" shall be provided.

(2) The safety valve installed to the extinguisher cylinder (limited to the cylinder not controlled by the High Pressure Gas Safety Act) or other valve than the cylinder valve shall be operated within the operating pressure range specified in the following table in accordance with the classification of the fire extinguisher needing the subject safety valve as prescribed in that table.

Classification of fire extinguisher needing safety valve		Operating pressure range of safety valve, MPa		
		Upper limit	Lower limit	
		Pressure	Pressure isolation disc type	Spring type
Gas cartridge operated fire extinguisher	Fire extinguisher with shut-off nozzle	$P \times 1.3$	$P \times 1.1$	$P \times 1.0$
	Fire extinguisher with other nozzle than shut-off nozzle	$P \times 0.9$	$P \times 1.1$	$P \times 1.0$
Stored-pressure extinguisher	$Q \times 1.3$		$Q \times 1.1$	$Q \times 1.0$

(3) In the table shown in the preceding paragraph, P and Q represent the pressures prescribed in Article 12(2). P is the maximum internal pressure of the extinguisher cylinder during the discharge of fire extinguishing agent under the assumption that the temperature inside the cylinder is 40°C (maximum temperature for the fire extinguisher whose service temperature range exceeds 40°C).

(4) Safety valves installed to cylinder valves shall meet the following items.

(i) The safety valve that will be installed to the cylinder valves of carbon dioxide fire extinguishers and expellant gas cylinders containing carbon dioxide shall be of pressure isolation disc type. The safety valve that will be installed to other cylinder valves shall be of pressure isolation disc, welded plug, or pressure isolation and welded plug type.

(ii) The pressure isolation disc type safety valve shall be operated within the operating pressure range specified in the following table in accordance with the classification of the cylinder needing the subject cylinder valve as prescribed in the that table.

Classification of cylinder needing cylinder valve		Operating pressure range of safety valve, MPa	
		Upper limit	Upper limit
Carbon dioxide fire extinguisher and expellant gas cylinder containing carbon dioxide		24.5	17.5
Other fire extinguisher than carbon dioxide fire extinguisher and expellant gas cylinder containing nitrogen gas	A	P1	$P1 \times 0.7$ (P2, if the calculation is lower than P2)
	Other than category A	$P1 \times 0.8$	$P1 \times 0.68$ (P2, if the calculation is lower than P2)

(iii) The welded plug type safety valve shall be operated within the operating temperature range specified in the following table in accordance with the classification of the cylinder needing the subject cylinder valve as prescribed in the that table.

Classification of cylinder needing cylinder valve		Operating temperature range of safety valve, MPa	
		Upper limit	Upper limit
Other fire extinguisher than carbon dioxide fire extinguisher and expellant gas cylinder containing nitrogen gas	A	T1	T2 (65°C, if T2 is lower than 65°C)
	Other than category A	T3	T4 (65°C, if T4 is lower than 65°C)

(iv) The pressure isolation and welded plug type safety valve shall be operated within the operating pressure and temperature ranges specified in the tables in Items (ii) and (iii), respectively, in accordance with the classification of the cylinder needing the subject cylinder valve as prescribed in the these tables.

(5) In the tables shown in the preceding paragraph, the meanings of the terms listed in the following items shall be as prescribed respectively in those items.

(i) A: The cylinder designed to endure the pressure at least 25/12 times the maximum charging pressure (the maximum gas charging pressure attainable at 35°C for the cylinder containing compressed gas or the maximum gas charging pressure attainable at 48°C for the cylinder containing liquefied or mixed gas; the same shall apply hereinafter).

(ii) P₁: The pressure applied to the cylinder in the pressure test.

(iii) P₂: The internal pressure of the cylinder at 65°C.

(iv) T₁: The in-cylinder gas temperature measured at the cylinder pressure test pressure.

(v) T₂: The in-cylinder gas temperature measured at the cylinder pressure test pressure multiplied by 0.7.

(vi) T₃: The in-cylinder gas temperature measured at the cylinder pressure test pressure multiplied by 0.8.

(vii) T₄: The in-cylinder gas temperature measured at the cylinder pressure test pressure multiplied by 0.68.

Expellant gas cylinders

Article 25 Expellant gas cylinders whose internal volume exceeds 100 cm³ shall meet the following items.

(i) When the expellant gas cylinder changed with gas is immersed into the 40°C hot water for 2 h, it shall not generate leak.

(ii) The outside surface of the expellant gas cylinder installed inside the extinguisher cylinder shall not be sensitive to the fire extinguishing agent changed in the extinguisher cylinder. In addition, the expellant gas cylinder shall be free from troubles such as separation of indication or paint.

(iii) The expellant gas cylinder installed to the outside of the extinguisher cylinder shall be protected from external impacts.

(iv) The internal volume of the expellant gas cylinder containing carbon dioxide shall be not less than 1.5 cm³ per 1 g of liquefied carbon dioxide.

(v) When the hydraulic pressure ranging from 17.5 MPa to not more than 3/4 of the design cylinder burst pressure is applied to the pressure isolation disc, the disc shall be broken in this test.

(2) Expellant gas cylinders whose internal volume is 100 cm³ or less shall meet the following items in addition to those prescribed in Items (i) to (iv) of the preceding paragraph.

(i) When the expellant gas cylinder to which the carbon dioxide will be changed is subjected to the test where the hydraulic pressure of 24.5 MPa is applied for 2 min, the cylinder shall not generate water leak or abnormal expansion. When the expellant gas cylinder to which the nitrogen gas will be changed is subjected to the test where the hydraulic pressure of 5/3 of the maximum charging pressure is applied for 2 min, the cylinder shall not generate water leak or abnormal expansion.

(ii) When the hydraulic pressure prescribed in the preceding item is applied to the pressure isolation disc, the disc shall not be broken in this test.

(iii) The expellant gas cylinder, when broken, shall not endanger the surrounding people and objects.

Pressure regulators

Article 26 Pressure regulators of fire extinguishers shall meet the following items.

(i) The pressure regulator shall conform to JIS B 6803 (except for the provision pertaining to discharge performance).

(ii) The pressure regulator shall be protected from unauthorized disassembly or adjustment.

(iii) On the pressure gauge of the pressure regulator, the adjustable pressure range shall be indicated

in green.

Gas lead-in tubes

Article 27 When the hydraulic pressures specified in the tables in Articles 12(1)(i) and (ii) in accordance with the extinguisher cylinder classification for gas cartridge operated fire extinguishers (20 MPa for the gas lead-in tube arranged between the expellant gas cylinder and pressure regulator in case of the fire extinguisher having the pressure regulator between the expellant gas cylinder and extinguisher cylinder; or the gas lead-in tube arranged between the expellant gas cylinder and shut-off valve in case of the fire extinguisher having the shut-off valve, instead of the pressure regulator, between the expellant gas cylinder and extinguisher cylinder) are applied to the fire extinguisher gas lead-in tubes, the tubes shall not generate water leak and extreme deformation.

Pressure gauges

Article 28 Stored-pressure extinguishers (except for carbon dioxide fire extinguishers and bromotrifluoromethane (hereinafter referred to as “halon 1301”) fire extinguishers) shall be equipped with the pressure gauge that meets the following items.

- (i) The allowable error of the pressure indicated by the pressure gauge shall not deviate from $\pm 10\%$ of the service pressure range when the gauge is tested as prescribed below.
 - (a) Static pressure test: The pressure twice the upper limit of the service pressure is continuously applied to the gauge for at least 30 min.
 - (b) Pressure cycle test: The pressure cycle is input to the gauge at the rate of 15 times per minute until the total number of cycles reaches 1000. One pressure cycle consists of elevation of pressure from 0 MPa to the upper limit of the service pressure and reduction of pressure to 0 MPa.
 - (c) Drop test: The gauge is placed in a 1-kg wooden box and the box is gravitationally dropped onto the hard wooden floor from a height of 50 cm.
 - (d) Temperature fluctuation test: The temperature is changed between -30°C and 60°C .
 - (e) Vibration test conforming to the test conditions prescribed in Article 30.
- (ii) Scales shall be easily identifiable.
 - (iii) The pointer and scale plate shall be made of corrosion-resistant metallic material.
 - (iv) The pressure detector and its joint shall be durable.
 - (v) The casing shall have such structural design that it will not generate water leak when immersed into hot water of 60°C for 20 min and may effectively reduce the pressure entrapped in it.
 - (vi) The material and service operating pressure range (in MPa) of the pressure detector and the symbol “○ EXTINGUISHER” shall be indicated on the pressure gauge.
 - (viii) The service pressure range shall be indicated in green.
 - (viii) The mount screws for the pressure gauge shall conform to JIS B 0202 and certainly engage

with the target when the gauge is mounted to it.

(ix) The pressure gauge shall be protected from external impacts.

Gas, etc., sources of discharge pressure

Article 29 Gases or chemicals charged in fire extinguishers as discharge pressure source shall not affect the performance and properties of fire extinguishing agents.

Vibration test of automotive fire extinguishers

Article 30 When an automotive fire extinguisher is installed as shown in any of figures below and the vertical vibration characterized by double amplitude of 2 mm and 2000 cycles per minute is input to the extinguisher for 2 h for the configuration of Fig. 1 or 2 or 4 h for the configuration of Fig. 3, it shall not generate leak, cracking, rupture, or extreme deformation. For the fire extinguisher installed together with the holder, the holder, instead of the mount apparatus, shall be mounted on the extinguisher. The holder, when tested, shall not generate extreme damage or other troubles.

Fig. 1 (Omitted)

Fig. 2 (Omitted)

Fig. 3 (Omitted)

Remark: The mount surface shall be parallel or orthogonal to the vibration disc.

Hand pump

Article 31 Water fire extinguishers operated with hand pump shall be in such structural design that the fire extinguishing agent will not be violently discharged to cause pulsation.

(2) For water fire extinguishers operated with hand pump whose pump piston uses bowl-shaped leather, such a structural design shall be employed that the leather will be lubricated with lubricant.

Support, etc. for acid-alkali fire extinguishers

Article 32 Acid-alkali and loaded stream fire extinguishers shall use rugged supports or other appropriate members to protect the fire extinguishing agent storage bottle from damage during transportation, carrying, or handling.

Operation rod, etc.

Article 33 The operation rod and gas lead-in tube used to introduce the gas, or discharge pressure source, into the extinguisher cylinder shall meet the following items.

(i) The operation rod shall have the structure and mechanical strength suitable for opening the cover of the expellant gas cylinder easily and certainly.

(ii) The gas lead-in tube shall have the structure and mechanical strength suitable for effectively introducing the gas, or discharge pressure source, into the extinguisher cylinder.

Inner cylinders of chemical foam fire extinguishers

Article 34 Inner cylinders of chemical foam fire extinguishers shall meet the following items.

(i) The inner cylinder shall have the structure and mechanical strength that will not impair the functions of the fire extinguisher.

(ii) A simplified and clear mark showing the liquid level of the fire extinguishing agent charged shall be indicated on the inner cylinder.

(2) The unsealed inner cylinder of the chemical foam fire extinguisher shall meet the following items in addition to those specified in the preceding paragraph.

(i) Even when the fire extinguisher is tilted by 30°, the chemical shall not leak from it.

(ii) For the turnover type fire extinguisher, the inner cylinder equipped with automatic cover fall-down mechanism shall meet the following items.

(a) The distance from the indication prescribed in Paragraph (1)(ii) to the cover seat shall be at least 0.6 times the inside diameter of the inner cylinder.

(b) The cover shall certainly fall and, when gravitationally dropped onto the hard wooden floor from a height of 0.8 m, shall not generate extreme deformation and other troubles.

(iii) Covers for other inner cylinders than the cylinders prescribed in the preceding item shall not be damaged during the transportation, carrying, and handling of the fire extinguisher and shall be readily opened when the fire extinguisher is operated.

Charge ratio, etc. of carbon dioxide and other fire extinguishers

Article 35 For carbon dioxide fire extinguishers, bromochlorodifluoromethane (hereinafter referred to as "halon 1211") fire extinguishers, and halon 1301 fire extinguishers, the internal volumes of their extinguisher cylinders shall be not less than 1500 cm³ per 1 kg of liquefied carbon dioxide charged, 700 cm³ per 1 kg of halon 1211 charged, and 900 cm³ per 1 kg of halon 1301 charged, respectively.

(2) Hoses of carbon dioxide, halon 1211, and halon 1301 fire extinguishers, when subjected to the tests specified below notwithstanding the provision of Article 15(2)(i), shall not generate leak, cracking, extreme deformation, or other troubles.

(i) With hoses deployed, the hydraulic pressure of 16 MPa is applied to the carbon dioxide fire extinguisher and the hydraulic pressure 1.2 times the internal pressure at 48°C is applied to halon 1211 and 1301 fire extinguishers. In both the tests, the test duration shall be 5 min.

(ii) With hoses bent circularly so that the radius will be 5 times the outside diameter of each hose, the hydraulic pressure of 12 MPa is applied to the carbon dioxide fire extinguishers and the

hydraulic pressure equal to the internal pressure at 48°C is applied to halon 1211 and 1301 fire extinguishers. In both the tests, the test duration shall be 5 min.

- (3) The discharge tube of the carbon dioxide fire extinguisher shall be covered with heat insulator.
- (4) Discharge horns of carbon dioxide, halon 1211, and halon 1301 fire extinguishers shall be made of hygroscopic, electrically nonconductive, and tough material.
- (5) Discharge tubes and couplings of carbon dioxide, halon 1211, and halon 1301 fire extinguishers, when subjected to the 5-min hydraulic pressure test under the pressure conditions prescribed in Paragraph (2)(i), shall not generate leak, separation, and other troubles.

Special provision for cylinders controlled by the High Pressure Gas Safety Act

Article 36 Extinguisher cylinders, mouthpieces, and expellant gas cylinders controlled by the High Pressure Gas Safety Act shall be in accordance with this Act and the Vessel Security Rules, notwithstanding the provisions of Articles 12 and 13 of this Ordinance. However, the figure “19.6” applied to the liquefied carbon dioxide in Article 2(xv) of the Vessel Security Rules shall be deemed to be replaced with “24.5.”

Paint color




Article 37 For fire extinguishers, at least 25% of the outside surface shall be painted in red color.

Indication and sign

Article 38 The information specified in the following items shall be clearly indicated on all fire extinguishers at easily observable place in a simplified manner.

- (i) Classification of device: Water fire extinguisher, acid-alkali fire extinguisher, loaded stream fire extinguisher, foam fire extinguisher, halogenated fire extinguisher, carbon dioxide fire extinguisher, or powder fire extinguisher
- (ii) Notice informing that the device is not a residential fire extinguisher
- (iii) Classification of device: Gas cartridge operated fire extinguisher or stored-pressure extinguisher
- (iv) Operating method. (Illustration shall be added for handheld and stationary fire extinguishers.)
- (v) Service temperature range
- (vi) For fire extinguishers that must not be used for Class B fire (except for the fire on transformers, switchboards, and similar electrical equipment (hereinafter referred to as “electrical fire”)) or electrical fire, the fact shall be indicated.
- (vii) Ratings for Class A and B fires
- (viii) Discharge time
- (ix) Discharge distance
- (x) Manufacturing number

- (xi) Year of manufacture
- (xii) Name of manufacturer
- (xiii) Model code (excluding automotive fire extinguishers)
- (xiv) Pressures used in the tests prescribed in Article 12(1)(i)
- (xv) Operating pressure of safety valve
- (xvi) Volume or mass of fire extinguishing agent charged
- (xvii) Gross mass (except for the case where the amount of the fire extinguishing agent charged is expressed in volume)
- (xviii) Effective length of the hose (limited to stationary fire extinguishers)
- (xix) Handling precautions listed below:
 - (a) (Omitted)
 - (b) (Omitted)
 - (c) Designed period or deadline determined as standard period or deadline during/until which the fire extinguisher may be used without compromising its safety when used under standard service conditions
 - (d) Description about safe handling of fire extinguisher during the operation
 - (e) Description about proper installation place from the viewpoint of maintenance and management
 - (f) Description about inspection
 - (g) Contact person in case of disposal and description about safe handling
 - (h) Other handling precautions
- (2) (Omitted)
- (3) (Omitted)
- (4) Any of the following symbols shall be indicated on each fire extinguisher at easily observable place in accordance with the provisions in the following items.
 - (i) For fire extinguishers that may address Class A fire (except for electrical fire; hereinafter the same shall apply in this item), the letters "FOR CLASS A FIRE" shall be clearly indicated. For fire extinguishers that may address Class B fire (except for electrical fire; the same shall apply hereinafter), the letters "FOR CLASS B FIRE" shall be clearly indicated. For fire extinguishers that may address electrical fire, the letters "FOR ELECTRICAL FIRE" shall be clearly indicated. In addition, any of graphical symbols shown in the following table shall be indicated in accordance with the fire classification specified in that table. Colors used in these symbols shall conform to the requirements specified in the table.

Fire classification	Graphical symbol	Colors of graphical symbol
Class A fire		The flame shall be in red. The combustibles showing Class A fire shall be in black. The background shall be in white.
Class B fire		The flame shall be in red. The combustibles showing Class B fire shall be in black. The background shall be in yellow.
Electrical fire		The lightening showing electrical fire shall be in yellow. The background shall be in blue.

(ii) The radius of the graphical symbol prescribed in the preceding item shall be 1 cm or more when the volume or mass of the fire extinguishing agent charged in the fire extinguisher is not more than 2 L or 3 kg, respectively. This radius shall be 1.5 cm or more when the volume or mass of the fire extinguishing agent exceeds 2 L or 3 kg, respectively.

(iii) Fire extinguishers that may address different fire classifications by changing the nozzle: For the nozzle designed for Class B fire, the letters “__ NOZZLE: FOR CLASS B FIRE” shall be clearly indicated. For the nozzle designed for electrical fire, the letters “__ NOZZLE: FOR ELECTRICAL FIRE” shall be clearly indicated.

Chapter 3 Residential Fire Extinguishers

Structure

Article 39 Residential fire extinguishers (refer to those residential fire extinguishers other than replaceable fire extinguishers; hereinafter the same shall apply in this Chapter) shall be of stored-pressure type and features such a structure that the fire extinguishing agent may not be recharged.

Fire extinguishing performance

Article 40 Residential fire extinguishers shall have the fire extinguishing performance specified in the following items and be capable of addressing electrical fire.

(i) Fire extinguishing performance for ordinary fire (refers to Class A fire except for electrical fire):
When the fire extinguishing test is implemented by using the following model in accordance with

provisions in (a) and (b), the afterflame shall not be observed after the complete discharge of the fire extinguishing agent and the model shall not be reignited within 2 min from the completion of discharge.

(a) Pour 0.6 L of n-heptane (limited to the material whose boiling point ranges from 96°C to 102°C and purity is 95% or more; the same shall apply hereinafter) in a combustion pan, and ignite the material.

(b) Commence the fire extinguishing 3 min after the ignition.

(ii) Fire extinguishing performance for Tempura oil fire (refers to the fire caused by the ignition of the oil in Tempura pans used in residences): When the fire extinguishing test is implemented by using the following model in accordance with provisions in (a) to (c), extreme development of fire, oil scattering, and other unpreferable phenomena shall not occur during the discharge of fire extinguishing agent and the model shall not be reignited within 1 min from the completion of discharge.

(a) Pour 1 L of soybean oil (limited to the oil whose ignition point ranges from 360°C to 370°C) in a Tempura pan, and heat and ignite the oil using a gas ring.

(b) Commence the fire extinguishing when the oil temperature reaches 400°C.

(c) When the flame disappears in the model, turn off the gas ring.

(iii) Fire extinguishing performance for stove fire (refers to the fire caused by the ignition of the kerosene in oil stoves used in residences): When the fire extinguishing test is implemented by using the following model in accordance with provisions in (a) and (b), the afterflame shall not be observed after the complete discharge of the fire extinguishing agent and the model shall not be reignited within 1 min from the completion of discharge.

(a) Place an open type natural ventilating oil stove with radiation design, which conforms to JIS S 2019, on a tatami mat and burn the fuel for 10 min. Scatter kerosene conforming to (1) of JIS K 2203 onto the bottom of the stove and tatami mat, and scatter 50 mL of n-heptane as ignition initiator and ignite it.

(b) Commence the fire extinguishing 1 min after the ignition.

(2) Fire extinguishing tests prescribed in the items of the preceding paragraph shall be implemented under the conditions specified in the following items.

(i) The operator of the residential fire extinguisher shall not wear fire preventive clothing.

(ii) The tests shall be implemented in no-wind condition.

Operation mechanism

Article 41 Residential fire extinguishers shall be capable of commencing the discharge easily and certainly in a single action (not more than two actions for stationary residential fire extinguishers). In this case, those actions necessary to remove the fire extinguisher from its holder, remove the safety

relief device, and deploy the hose shall be excluded.

(2) For controls of the residential fire extinguisher, such as safety relief device and lever, their operating methods shall be indicated at easily observable place in such a manner that the subject information may not be readily erased.

Fire extinguishing agents

Article 42 Halogenated fire extinguishing agent or liquefied carbon dioxide shall not be charged to residential fire extinguishers as fire extinguishing agent.

(2) Provisions in Paragraphs (1) and (2) of Article 7 shall apply mutatis mutandis to residential fire extinguishers.

Caps, plugs, mouthpieces, and packings

Article 43 Caps, plugs, mouthpieces, and packings of residential fire extinguishers shall meet the requirements prescribed in Items (i) to (iii) and (v) of Article 13. The cap, plug, and packing shall be completely fixed to the mouthpiece by means of methods such as welding, so that the component may not be removed.

Indication

Article 44 The information specified in the following items shall be clearly indicated on all residential fire extinguishers at easily observable place in a simplified manner.

(i) Classification of device: Water fire extinguisher, loaded stream fire extinguisher, foam fire extinguisher, or powder fire extinguisher

(ii) Notice informing that the device is residential fire extinguisher

(iii) Operating method. (Illustration shall be added.)

(iv) Service temperature range

(v) Graphical symbol indicating applicable fire (indicated as shown in illustrations)

(vi) Discharge time

(vii) Discharge distance

(viii) Manufacturing number

(ix) Year of manufacture

(x) Name of manufacturer

(xi) Model code

(xii) Volume or mass of fire extinguishing agent charged

(xiii) Effective length of hose (limited to stationary fire extinguishers)

(xiv) Handling precautions listed below:

(a) Description about pressure gauge

- (b) Description about service period or deadline
- (c) Notice informing that the fire extinguishing agent may not be recharged
- (d) Description about safe handling of fire extinguisher during the operation
- (e) Description about proper installation place from the viewpoint of maintenance and management
- (f) Description about inspection
- (g) Description about Tempura oil fire
- (h) Contact person in case of disposal and description about safe handling
- (i) Other handling precautions

Application mutatis mutandis

Article 45 Provisions in Articles 6, 10 to 12-2, 14, 15(2), 16, 19, 21, 22 to 24, 28, 29, and 36 shall apply mutatis mutandis to residential fire extinguishers. In this case, the replacement of terms shall be as prescribed in the table below.

Original provision	Replaced term	Replacing term
Articles 6, 10 to 12-2, 14, 15(2), 16, 19, 21, 22 to 24, 28, and 29	Fire extinguisher	Residential fire extinguisher
Article 10(iv)	90% (85% for chemical foam fire extinguishing agent)	85%
Article 15(2)(ii)	10 m	5 m

Chapter 4 Replaceable Fire Extinguishers

Rating of replaceable fire extinguishers other than residential fire extinguishers

Article 46 When the replaceable fire extinguisher other than residential fire extinguisher is used under the combination with container (limited to the equipment compatible with the subject replaceable fire extinguisher), the rating measured in the fire extinguishing tests prescribed in Articles 3 and 4 shall be not less than 1. However, the rating shall be not less than 10 for the replaceable wheeled extinguisher that addresses Class A fire or not less than 20 for replaceable wheeled extinguisher that addresses Class B fire.

Fire extinguishing performance of replaceable residential fire extinguishers

Article 47 When the replaceable residential fire extinguisher is used under the combination with container, the fire extinguishing performance shall meet the requirements provided in Article 40.

Discharge performance

Article 48 When the container is connected to the replaceable fire extinguisher and the fire extinguishing agent is discharged by using the normal operating method, the subject extinguisher shall meet the requirements provided in items of Article 10. (The replaceable residential fire extinguisher shall meet the requirements in Items (i) to (iii) of Article 10 and be capable of discharging not less than 85% of the charged agent's volume or mass.)

Service temperature range

Article 49 When the replaceable fire extinguisher connected to a container is operated in either of the temperature ranges prescribed in items of Article 10-2 depending on its classification, the subject fire extinguisher shall be capable of normal operation and effective demonstration of fire extinguishing and fire extinguishing agent discharge functions.

Vibration test of automotive replaceable fire extinguishers

Article 50 When the automotive replaceable fire extinguisher is connected to a container, it shall meet the requirements provided in Article 30.

Indication

Article 51 The information specified in the following items shall be clearly indicated on extinguisher cylinders of all replaceable fire extinguishers in a simplified manner.

(i) to (v) are omitted.

(vi) Handling precautions listed below:

(a) is omitted.

(b) Contact person in case of disposal and description about safe handling

(c) Other handling precautions

Application mutatis mutandis

Article 52 Provisions in Articles 6 to 9, 11 to 14, 17 to 19, 24, 28, 29, and 34 to 36 shall apply mutatis mutandis to replaceable fire extinguishers other than replaceable residential fire extinguishers. In this case, the term "fire extinguisher" in these Articles shall be deemed to be replaced with "replaceable fire extinguisher."

(2) Provisions in Articles 6, 11 to 12-2, 14, 19, 24, 28, 29, 36, 39, 42, and 43 shall apply mutatis mutandis to replaceable residential fire extinguishers. In this case, the term "fire extinguisher" in these Articles shall be deemed to be replaced with "replaceable residential fire extinguisher."

Chapter 5 Miscellaneous Provisions

Exemption from standards

Article 53 When the Minister of Internal Affairs and Communications recognizes that fire extinguishers newly created as a result of technology development activities have the performance equivalent to or higher than those conforming to the provisions prescribed in this Ordinance, judging from their profiles, structures, materials, and performance, the technical standards specified by the Minister of Internal Affairs and Communications shall apply to these new developments notwithstanding the provisions of this Ordinance.

Supplementary Provisions-Excerpt

(1) This Ordinance shall come into effect as of the day of promulgation.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 29 of October 23, 1969)-Excerpt

(1) This Ordinance shall come into effect as of January 1, 1970.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 28 of October 17, 1973)-Excerpt

(1) This Ordinance shall come into effect as of January 1, 1974.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 27 of October 30, 1981)

(1) This Ordinance shall come into effect as of December 1, 1981.

(2) For tests pertaining to fire extinguishers whose application for test has been already made to have the fire extinguishing equipment apparatus tested by the Japan Fire Equipment Inspection Institute at the time of enforcement of this Ordinance, the provisions then in force shall remain applicable.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 24 of November 15, 1982)

(1) This Ordinance shall come into effect as of December 1, 1982. However, the amended provision in Article 1-2 shall come into effect as of January 1, 1983.

(2) For tests pertaining to fire extinguishers whose application for test has been already made to have the fire extinguishing equipment apparatus tested by the Japan Fire Equipment Inspection Institute as of December 1, 1982, the provisions then in force shall remain applicable.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 7 of March 18, 1987)

This Ordinance shall come into effect as of the day of promulgation.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 3 of February 20, 1989)-Excerpt

Effective date

(1) This Ordinance shall come into effect as of May 23, 1990.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 7 of February 24, 1993)

(1) This Ordinance shall come into effect as of March 1, 1993.

(2) For tests pertaining to fire extinguishers whose application for test has been already made to have the fire extinguishing equipment apparatus tested by the Japan Fire Equipment Inspection Institute or any organization designated by the Minister of Home Affairs at the time of enforcement of this Ordinance, the provisions then in force shall remain applicable.

(3) For fire extinguishers that have already got model approvals at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the amended Ordinance for Technical Specifications pertaining to Fire Extinguishers.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 37 of September 28, 1998)-Excerpt

Effective date

Article 1 This Ordinance shall come into effect as of October 1, 1999.

Transitional measures

Article 2 For tests pertaining to fire extinguishers, fire extinguishing agents, automatic closed sprinkler heads, fire hoses, deluge valves, foam concentrates, detectors and manual call points, water flow detecting devices, plug-in couplings, and screw couplings whose application for test has been already made to have the target equipment tested by the Japan Fire Equipment Inspection Institute at the time of enforcement of this Ordinance, the provisions then in force shall remain applicable.

(2) For fire extinguishers that have already got model approvals and fire extinguishers that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in the preceding paragraph at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Fire Extinguishers

amended according to the provisions of Article 1.

(3) For fire extinguishing agents that have already got model approvals and fire extinguishing agents that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Fire Extinguishing Agents amended according to the provisions of Article 2.

(4) For automatic closed sprinkler heads that have already got model approvals and automatic closed sprinkler heads that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Automatic Closed Sprinkler Heads amended according to the provisions of Article 3.

(5) For fire hoses that have already got model approvals and fire hoses that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Fire Hoses amended according to the provisions of Article 4.

(6) For deluge valves that have already got model approvals and deluge valves that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Deluge Valves amended according to the provisions of Article 5.

(7) For foam concentrates that have already got model approvals and foam concentrates that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Foam Concentrates amended according to the provisions of Article 6.

(8) For detectors and manual call points that have already got model approvals and detectors and manual call points that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to

Detectors and Manual Call Points of Fire Detection and Fire Alarm Systems amended according to the provisions of Article 7.

(9) For water flow detecting devices that have already got model approvals and water flow detecting devices that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Water Flow Detecting Devices amended according to the provisions of Article 8.

(10) For plug-in couplings that have already got model approvals and plug-in couplings that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Plug-in Couplings used for Fire Hoses amended according to the provisions of Article 11.

(11) For screw couplings that have already got model approvals and screw couplings that have got model approvals based on the results from the tests identified by the prescription “provisions then in force shall remain applicable” as described in Paragraph (1) at the time of enforcement of this Ordinance, their model approvals shall be deemed as those provided in accordance with the standards prescribed in the Ordinance for Technical Specifications pertaining to Screw Couplings used for Fire Hoses or Fire Suction Hoses amended according to the provisions of Article 12.

(12) For power driven fire pumps that were notified to the Minister of Home Affairs in accordance with the provision of Article 21-16-4(1) of the Fire Service Act (Act No. 186 of 1948) before the enforcement of this Ordinance, they shall be deemed as those that conform to the standards prescribed in the Ordinance for Technical Specifications pertaining to Power Driven Fire Pumps amended according to the provisions of Article 9.

(13) For fire suction hoses that were notified to the Minister of Home Affairs in accordance with the provision of Article 21-16-4(1) of the Fire Service Act before the enforcement of this Ordinance, they shall be deemed as those that conform to the standards prescribed in the Ordinance for Technical Specifications pertaining to Fire Suction Hoses amended according to the provisions of Article 10.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 44 of September 14, 2000)

This Ordinance shall come into effect as of the effective date (January 6, 2001) of the Act for Partial Revision of Cabinet Law (Act No. 88 of 1999).