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Ordinance for Technical Specifications pertaining to Deluge Valves
(Ordinance of the Ministry of Home Affairs No. 19 of September 26, 1975)

Latest update: Ordinance of the Ministry of Home Affairs No. 44 of September 14, 2000

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 Deluge Valves shall be specified as follows.

Purport

Article 1 This Ordinance covers the technical specifications of deluge valves for use in sprinkler systems, water spray extinguishing systems, or foam extinguishing systems (except for those valves whose pipe connection exceeds 300 mm in inside diameter; hereinafter referred to as “deluge valves”).

Structure

Article 2 Deluge valves shall meet the following structural requirements.

- (i) The valve body shall always keep the closed state and be opened by the operation of the initiating device.
- (ii) Even when the water supply is terminated after the opening of the valve body, the deluge valve shall be capable of accepting the water again.
- (iii) The deluge valve shall not generate functional degradation due to deposits.
- (iv) The pipe joint shall be designed to permit easy connection with piping.
- (v) The portion where the pressurized water or pressurized foam solution (hereinafter referred to as “pressurized water, etc.”) flows shall be finished smoothly.
- (vi) The deluge valve and its components shall permit easy maintenance, inspection, and replacement.
- (vii) The valve seat surface shall be free from harmful imperfections that cause functional degradation.

Material

Article 3 Deluge valves shall meet the following material requirements.

- (i) Major portions of the deluge valve shall be made of the material conforming 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)) G 5501, G 5151, H 5120, or H 5121 or the material having the mechanical strength and corrosion resistance equal to or higher than those of these JIS materials.
- (ii) For the portions sensitive to rust, an effective rust preventive treatment shall be provided.
- (iii) Rubbers, synthetic resins, and other sensitive components used in the deluge valve shall endure the property alteration prolongedly.

Maximum service pressure range

Article 3-2 The maximum service pressure range (refers to the maximum pressure of the pressure range (refers to the range within which the deluge valve will not suffer functional degradation; the same shall

apply hereinafter); the same shall apply hereinafter) of the deluge valve's primary system (refers to the inflow side portion up to the deluge valve; the same shall apply hereinafter) shall stay within the range prescribed in the following table in accordance with the nominal designation specified in that table.

Nominal designation /// Pressure, MPa

10K /// 1.0 to 1.4

16K /// 1.6 to 2.2

20K /// 2.0 to 2.8

Withstanding pressure

Article 4 When the pressure prescribed in the following table in accordance with the nominal designation specified in that table is applied to the deluge valve for 2 min, the valve box shall not generate water leak, deformation, damage, or rupture.

Nominal designation /// Pressure, MPa

10K /// 2.0

16K /// 3.2

20K /// 4.0

(2) The valve open control module that uses the pressure as a power source (hereinafter referred to as "control power source") to open the valve, when the pressure prescribed in the table of the previous item (for the valve open control module to which the pressure different from the primary system pressure is applied, the pressure shall be 1.5 times the maximum service pressure of the module) in accordance with the nominal designation specified in that table is applied for 2 min, shall not generate water leak, deformation, damage, or rupture.

(3) With the valve closed, the valve seat shall meet the following requirements.

(i) When the pressure prescribed in the table of paragraph (1) in accordance with the nominal designation specified in that table is applied to the valve seat for 2 min, it shall not generate deformation, damage, or rupture.

(ii) When the pressure prescribed in the following table in accordance with the nominal designation specified in that table is applied to the valve seat for 2 min, it shall not generate water leak.

Nominal designation /// Pressure, MPa

10K /// 1.5

16K /// 2.4

20K /// 3.0

Function, etc.

Article 5 When the initiating device is operated, deluge valves shall be opened within 15 s (60 s for valves whose inside diameter exceeds 200 mm).

(2) When the pressurized water, etc. flows at 4.5 m/s (6 m/s for valves whose inside diameter is not more than 80 mm) for 30 min, deluge valves shall not generate functional degradation.

Indication

Article 6 The information specified in the following items shall be indicated on all of deluge valves at easily observable place in such a manner that the subject information may not be readily erased.

- (i) Type and model code
- (ii) Manufacturer's name or trademark
- (iii) Year of manufacture
- (iv) Manufacturing number
- (v) Inside diameter, nominal designation, and service pressure range of primary system
- (vi) Pressure loss expressed in equivalence of straight pipe length
- (vii) Arrow mark showing flow direction
- (viii) Direction of installation
- (ix) Service pressure range of valve open control module (limited to those valves that use the pressure that is different from the primary system pressure as control power source)
- (x) Type of fluid used as control power source (limited to those valves using the pressure of other fluid than the pressurized water, etc. as control power source)
- (xi) Type of control power source (limited to those valves that do not use the pressure as control power source)

Exemption from standards

Article 7 When the Minister of Internal Affairs and Communications recognizes that deluge valves 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

This Ordinance shall come into effect as of February 1, 1975.

Supplementary Provisions (Ordinance of the Ministry of Home Affairs No. 3 of January 18, 1983)

- (1) This Ordinance shall come into effect as of April 1, 1983.
- (2) For tests pertaining to deluge valves 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. 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. 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).