

Partial Revision of the Ministerial Ordinance on
the Technical Specifications for Fire Hoses, Etc.

J a n u a r y 2 0 0 8

F i r e P r e v e n t i o n D i v i s i o n

F i r e a n d D i s a s t e r M a n a g e m e n t A g e n c y

1. Reason for Revision

- (1) The Petroleum Refinery Complex, Etc., Disaster Prevention Law (2004) was revised in light of the complete burning of outdoor storage tanks with floating roofs during the 2003 Tokachi-Oki Earthquake. Specified worksites are therefore required to install large capacity foam monitors as part of their self-defense organizations for disaster prevention by November 30, 2008.

Fire hoses, fire foam concentrates, couplings, power driven fire pumps, and fire suction hoses used in large capacity foam monitors must be in accordance with the specifications in ministerial ordinances that set technical specifications (hereinafter, "ministerial ordinances on technical specifications") as machinery and apparatus subject to inspection (hereinafter, "machinery and apparatus"). The standards in current ministerial ordinances on technical specifications, however, did not anticipate the discharge capacities and other elements required with large capacity foam monitors.

The Council for the Promotion of Regulatory Reform's Third Report on the Promotion of Regulatory Reform and Privatization (December 25, 2006) and the Three-Year Plan for the Promotion of Regulatory Reform (passed by Cabinet resolution on June 22, 2007) therefore call for the regulation of large capacity foam injection system performance during FY 2007. In light of this, the ministerial ordinances on technical specifications listed in 2 (1) through (6) shall be revised in order to set new performance standards required for machinery and apparatus subject to inspection used with large capacity foam monitors.

- (2) In addition, technical progress has enabled use of higher working pressures and larger nominal diameters (hose inside diameters) in shape-retaining fire hoses and couplings utilized with indoor fire hydrants, with no loss of operability. The ministerial ordinances on technical specifications listed in 2 (1), (3), and (4) shall therefore be revised accordingly.

2. Ministerial Ordinances to be Revised

- (1) Ministerial Ordinance on the Technical Specifications for Fire Hoses (Ministry of Home Affairs Ordinance No. 27, September 19, 1968)
- (2) Ministerial Ordinance on the Technical Specifications for Fire Foam Concentrates (Ministry of Home Affairs Ordinance No. 26, December 9, 1975)
- (3) Ministerial Ordinance on the Technical Specifications for Snap Couplings for Fire Hoses (Ministry of Home Affairs Ordinance No. 2, January 29, 1992)
- (4) Ministerial Ordinance on the Technical Specifications for Screw-type Couplings for Fire Hoses or Fire Suction Hoses (Ministry of Home Affairs Ordinance No. 3, January 29, 1992)
- (5) Ministerial Ordinance on the Technical Specifications for Power Driven Fire Pumps (Ministry of Home Affairs Ordinance No. 24, October 15, 1986)

- (6) Ministerial Ordinance on the Technical Specifications for Fire Suction Hoses (Ministry of Home Affairs Ordinance No. 25, October 15, 1986)

3. Brief Overview of Revision

(1) Partial Revision of the Ministerial Ordinance on the Technical Specifications for Fire Hoses

(i) The main performance standards for hoses used with large capacity foam monitors shall be set as follows.

- 1) The inside diameters of hoses shall be within a specified range of their displayed nominal diameters.
- 2) The lengths of hoses shall be within a specified range of their displayed lengths.
- 3) Hoses shall withstand specified water pressures for specified periods.
- 4) Hose twisting shall be to the right and left and shall be within a range that does not impair performance when specified water pressures are added.
- 5) Rubbers or synthetic resins used with hose linings and coatings shall meet or exceed specified strengths.
- 6) Hose linings and coatings shall meet or exceed specified strengths of adhesion to jackets.
- 7) When specified water pressures are added, hose stretching and deformation shall not exceed specified values.

(ii) Working pressure 1.6 and 2.0 hoses shall be added to the types of shape-retaining fire hoses. Nominal diameter 40 hoses shall be added to all types. The main performance standards for these shape-retaining fire hoses shall be set as follows.

- 1) For working pressure 1.6 and 2.0 hoses, test pressure values, friction repetitions in abrasion resistance testing, and water pressure values in shape-retention testing shall be set.
- 2) For working pressure 1.6 and 2.0 and nominal diameter 40 hoses, specifications for mass and twisting shall be set.

(iii) Other specifications shall be revised as needed.

(2) Partial Revision of the Ministerial Ordinance on the Technical Specifications for Fire Foam Concentrates

(i) The main performance standards for fire foam concentrates used for large capacity foam monitor systems shall be set as follows.

- 1) The specific gravities of fire foam concentrates as measured using the specific-gravity bottle method or other JIS-specified methods shall be within specified ranges.
- 2) Viscosity of fire foam concentrates shall be at or below design values.
- 3) The expansion coefficients of foam when foaming solution has been added shall be within specified ranges.
- 4) The time required for foam to reduce to foaming solution shall meet or exceed a specified length.

- 5) When fuel is placed in a circular fire grate and ignited for firefighting testing, foaming solution caused to foam while meeting specified conditions shall put out the fire within a specified period.
 - 6) At a specified time after foaming is complete, a fire-resistance testing pot containing fuel shall be placed on the center of the foam's surface, ignited, and burned; the fire shall not re-ignite.
 - 7) At a specified time after foaming is complete, the fire shall not re-ignite even if flame is applied to the foam's surface.
- (ii) Other specifications shall be revised as needed.

(3) Partial Revision of the Ministerial Ordinance on the Technical Specifications for Snap Couplings for Fire Hoses

- (i) The main performance standards for snap couplings for large capacity foam monitors shall be set as follows.
- 1) For both insert and socket ends.
 - 2) The structure shall be such that it is difficult for an attached hose to detach.
 - 3) The structure of the connecting portion shall be such that it is easy to attach and detach.
 - 4) Materials used shall meet or exceed specified strengths.
 - 5) When specified water pressures are added for specified periods while attached, no cracking, remarkable deformation, or leaks shall occur, nor shall it detach from the connecting portion.
 - 6) When water pressure below a specified value is added while attached, no water shall leak from the connecting portion.
 - 7) When water pressure is added while attached, such that a specified bending moment occurs in the connecting portion, it shall not detach from the connecting portion, nor shall performance be impaired.
- (ii) Water pressure values for pressure resistance and leak testing of snap couplings not for use with large capacity foam monitors shall be in accordance with the working pressures of attached hoses.
- (iii) Other specifications shall be revised as needed.

(4) Partial Revision of the Ministerial Ordinance on the Technical Specifications for Screw-type Couplings for Fire Hoses or Fire Suction Hoses

- (i) The main performance standards for screw-type couplings for large capacity foam monitors shall be set as follows.
- 1) The structure shall be such that it is difficult for an attached hose or suction hose to detach.
 - 2) The structure of the connecting portion shall be such that it is easy to attach and detach.
 - 3) Materials used shall meet or exceed specified strengths.
 - 4) When specified water pressures are added for specified periods while attached, no cracking, remarkable deformation, or leaks shall occur, nor shall it detach from the connecting portion.
 - 5) For those used with hoses, when water pressure below a specified value is added while attached, no water shall leak from the connecting portion.

- 6) For those used with hoses, when water pressure is added while attached, such that a specified bending moment occurs in the connecting portion, it shall not detach from the connecting portion, nor shall performance be impaired.
 - 7) For those used with suction hoses, when left at or above a specified minimum internal vacuum degree for a specified period while attached, no cracking, leaking, or deformation shall occur.
- (ii) Water pressure values for pressure resistance and leak testing of screw-type couplings shall be in accordance with the working pressures of attached hoses.
- (iii) Other specifications shall be revised as needed.

(5) Partial Revision of Ministerial Ordinance on the Technical Specifications for Power Driven Fire Pumps

- (i) The main performance standards for fire pump vehicles and portable fire pumps for large capacity foam monitors (hereinafter, "power driven fire pumps for large capacity foam monitors") shall be set as follows.
- 1) Measures shall be taken to prevent attachment of fire hoses whose working pressure would be exceeded.
 - 2) For those using vacuum pumps, the vacuum pump shall shut off when pumping is complete.
 - 3) Those using submerged pumps shall be equipped with a device enabling operation to be checked and with a safety device for emergency shut off.
 - 4) The fuel-tank capacity of the pump mechanism shall be sufficient for two hours of continuous discharge at designed discharge volume to be maintained.
 - 5) Under specified conditions, it shall have its designed discharge volume.
 - 6) When discharge operation is maintained for eight hours at the maximum load for designed discharge pressure, discharge pressure shall not fall below the designed discharge pressure, and temperatures and sounds of pump shafts, bearings, and other parts shall remain stable, with no remarkable vibration.
 - 7) When specified water pressures are added for specified periods, pumps and pipes shall not leak or show remarkable deformation or other abnormalities.
- (ii) Other specifications shall be revised as needed.

(6) Partial Revision of the Ministerial Ordinance on the Technical Specifications for Fire Suction Hoses

- (i) The main performance standards for suction hoses for large capacity foam monitor shall be set as follows.
- 1) The inside diameters of suction hoses shall be within a specified range of their displayed nominal diameters.
 - 2) Suction hoses shall withstand specified water pressures for specified periods.
 - 3) When specified water pressures are added, stretching shall be at or below specified values, and after water pressure is removed, stretching shall return to or below specified values within a specified period.

- 4) Rubbers, synthetic rubbers, or synthetic resins used with suction hoses shall meet or exceed specified strengths.
 - 5) When suction hoses are left at or above a specified minimum internal vacuum degree for a specified period, no separation, cracking, leaking, or deformation shall occur; after returning to atmospheric pressure, contraction shall return to or below a specified value within a specified time.
 - 6) When bent 90 degrees under specified conditions and left for specified times, crushing shall be at or below specified values.
- (ii) Other specifications shall be revised as needed.

4. Effective date

Effective upon the date promulgated.