

[This translation is provisional translation for reference, formally refer to the original text.]

Ordinance of the Ministry of Home Affairs No. 2 of 1994

Ministerial order to provide technical standards for slow-descending device

In accordance with the provision of Article 21-2(2) of the Fire Service Act (Act No. 186 of 1948), the Ministerial order to revise all of the order to provide technical standards for slow-descending device (Ordinance of the Ministry of Home Affairs No. 4 of 1965) shall consist of the following parts.

Purport

Article 1 This Ordinance covers the technical specifications applicable to slow-descending device.

Definitions of terms

Article 2 In this Ordinance, the meanings of the terms listed in the following items shall be as prescribed in the respective items.

- (i) Slow-descending device
A device that possesses a mechanism where users are able to continuously take turns in descending from upper floors with the self-weight without assistance from others.
- (ii) Fixed slow-descending device
A slow-descending device that is fixed by attachment fixture at all times for use.
- (iii) Portable slow-descending device
A slow-descending device that is attached to fixture only when in use.
- (iv) Speed regulator
A device that adjusts the descending speed of slow-descending device within a certain scope.
- (v) Connection part of speed regulator
The part that connects the fixture and the speed regulator
- (vi) Body holder
Equipment that holds the body of users when they use the slow-descending device.
- (vii) Binding metal fitting
A metal fixture that connects the descending rope and the body holder.
- (viii) Reel
Equipment that rolls up the rope and the body holder.

General structure

Article 3 The structure of slow-descending device shall meet each of the following items:

- (i) The device shall be safe for use, and it shall not disintegrate, sustain damage, or become deformed while in use.
- (ii) The device shall be consisting of a speed regulator, a speed regulator connector, rope, and a body holder.
- (2) The structure of fixed slow-descending device shall enable secure fixing of the device to the attachment fixture, in addition to the requirements in the previous item;

- (3) The structure of portable slow-descending device shall meet the following requirements, in addition to the stipulations in Item (i):
 - (i) The weight of the speed regulator shall be 10 kilograms or less.
 - (ii) The device shall be easily attached to the fixture with a safety ring.

Component structures

Article 4 Speed regulators shall meet the requirements in each of the following items:

- (i) The speed regulator shall be sturdy and durable.
 - (ii) The speed regulator shall function normally without needing regular disassembly and cleaning.
 - (iii) The speed regulator shall not cause malfunctioning due to the heat that is induced by descending.
 - (iv) The speed regulator shall not cause the rope to be damaged at the time of descending.
 - (v) The speed regulator shall have a mechanism where sand and other foreign objects would not easily enter the speed regulator, which in turn could cause the speed regulator's functionality to fail.
 - (vi) The speed regulator shall have a cover with a sturdy structure.
 - (vii) The speed regulator shall have a structure where the rope is not detached from the pulley etc. of the regulator.
-
- (2) The connection part of the speed regulator shall not disintegrate, sustain damage, become deformed, or detached from the speed regulator while in use.
 - (3) The rope shall meet the requirements in each of the following items:
 - (i) The core of the rope shall have outer covering, and the rope shall be uniform in structure for the entire length.
 - (ii) The rope shall not cause the user to rotate violently while in descent, or sustain damage that could fail the functionality.
 - (iii) The rope shall have outer solid braiding or a structure that would not cause the same or increased level of twisting in comparison to the rope that has outer solid braiding.
 - (4) The body holder shall meet the requirements in each of the following items:
 - (i) The body holder shall be easy to wear.
 - (ii) The body holder shall securely hold the designated parts of the user's body without additional manipulation.
 - (iii) The body holder shall not slip away from the user when put on and in use, and shall not lose its snug fit.
 - (iv) The body holder shall be easily taken off when detachment manipulation is performed.
 - (v) The body holder shall not cause hinderance to the user's monitoring and its functioning while in use.
 - (vi) The body holder shall not cause bodily damage to the user.
 - (vii) The rope shall have the number of body holders equivalent to the maximum number of users (the maximum number of users who can descend at one time; hereafter the same applies) to each end of the rope in the way the body holders are not detached from the rope.
 - (viii) The belt of the body holder shall not cause continuous loose threads.

- (ix) The belt shall not break or become significantly deformed when it is sustained for 5 minutes by adding the tensile load equivalent to the value obtained by multiplying the value of maximum working load (the maximum load that can be imposed on the slow-descending device in actual use; hereinafter the same applies) divided by the maximum number of users by 6.5.
- (5) The binding metal fitting shall meet the requirements in each of the following items:
 - (i) The binding metal fitting shall connect the rope and the body holder in the way that detachment does not occur;
 - (ii) The binding metal fitting shall not become detached, disintegrate, sustain damage, or become deformed while in use.
 - (iii) The binding metal fitting shall not cause bodily harm to the user.
- (6) The reel shall meet the requirements in each of the following items:
 - (i) The reel shall be able to wind up the rope and the body holder in the way the rope and the body holder can smoothly be stretched for deployment;
 - (ii) The reel shall not cause bodily harm to the user.

Maximum working load

Article 5 The maximum working load of the slow-descending device shall be greater than or equal to the value obtained by multiplying the number of maximum users by 1,000 newtons.

Materials

Article 6 Out of the materials used in the parts of the slow-descending device, those which are listed in the upper columns of the chart below shall have the strength and durability equivalent to or more than that of those in the lower columns of the chart below.

Part name		Material
Rope	Core	Thing that conforms to JIS (refers to the Japanese industrial standards, as stipulated in Article 17(1) of the Industrial Standardization Act, Law No. 185 of 1949, hereinafter the same applies) G3525 (wire rope) and is added with corrosion-resistant features.
	Outer braiding	Cotton or polyester
Belt		Cotton or polyester
Ring, binding metal fitting, safety ring		Thing that conforms to JIS G3101 (rolled steel for general structure) and is added with corrosion-resistant features.
Rivet		Thing that conforms to JIS G3104 (sound steel bars for rivet) and is added with corrosion-resistant features.

Test conditions

Article 7 The tests that are stipulated from the following article to Article 10, as well as from Article 12 to Article 15, shall be conducted in the condition where ambient temperature is 10 degrees Celsius or more and 30 degrees Celsius or less.

Strength test

Article 8 The slow-descending device shall meet the following requirements when a static load that is equivalent to the value obtained by multiplying the value of maximum working load by 3.9 over the body holder toward the load direction (in the case the maximum number of users is 2 or more, static load that is equivalent to the value obtained by multiplying by 3.9 the value obtained by dividing the maximum load for each body holder by the maximum number of users) is imposed for 5 minutes.

- (i) The speed regulator, the connection part of the speed regulator, the ring, and the binding metal fitting, shall not become disintegrate, sustain damage, or become significantly deformed while in use.
- (ii) The rope shall not break or become significantly damaged, and become detached from the body holder or the binding metal fitting.

Descending speed test

Article 9 The descending speed of the slow-descending device shall meet the requirements in each of the following items when the slow-descending device is installed at the test height (the height for the maximum length of the rope; 15 meters of height in the case the rope length exceeds 15 meters), a load is imposed on a tip of the body holder, and then the slow-descending device is descended.

- (i) When the load that is equivalent to 250 newtons multiplied by the maximum number of users, as well as the maximum load that is equivalent to 650 newtons multiplied by the maximum number of users, and the load equivalent to the maximum working load, are added alternately in the left and the right, for continuous descending in the left and the right for one time each, the descending speed shall be 16 centimeters or more per second and 150 centimeters or less per second.
- (ii) When the load that is equivalent to 650 newtons multiplied by the maximum number of users is added alternately in the left and the right, and for continuous descending in the left and the right for 10 times each, the descent speed for each test shall be 80% or more and 120% or less of the average descending speed of 20 descents.

Water-retaining descending test

Article 10 After the rope of the slow-descending device is soaked in water for 1 hour, and at once installed at the test height, and the load that is stipulated in item (ii) of the previous Article is added on a tip of the body holder alternately in the left and the right, and for continuous descending in the left and the right for one time each, the descending speed of the slow-descending device shall be 80% or more and 120% or less of the average descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Low-temperature test and high-temperature test

Article 11 After the slow-descending device is left at 20 degrees Celsius below zero and 50 degrees Celsius for 24 hours, and at once installed at the test height, and the load that is stipulated in item (i) of Article 9 is added on a tip of the body holder alternately in the left and the right, and for continuous descending in the left and the right for one time each, the descending speed of the

slow-descending device shall stay within the scope of descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Repeated tests

Article 12 When the slow-descending device is installed at the test height, the load equivalent to the maximum working load is added on a tip of the body holder alternately in the left and the right, and the slow-descending device is lowered for 5 cycles repeatedly, where lowering the device continuously for 10 (in the case the length of the rope exceeds 15 meters, the number of descents shall be the value obtained by dividing the length of the rope by 15, and then multiplied by 10 (the fractions shall be discarded)) times for continuous descending in the left and the right is counted as 1 cycle, and after that the load that is stipulated in item (i) of Article 9 is added alternately in the left and the right and then the slow-descending device is lowered for one time each for continuous descending in the left and the right, the descending speed of the slow-descending device shall stay within the scope of descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Falling impact descent test

Article 13 When the descend-side rope of the speed regulator in the slow-descending device is pulled out by 25 centimeters, to be pulled up towards the complete opposite direction from the descending direction, with the load that is the equivalent to the maximum working load added on a tip of the body holder, for 5 times of repeated fall of the slow-descending device, and then the slow-descending device is installed at the test height, for continuous descending in the left and the right for one time each with the load that is stipulated in item (i) of Article 9, the descending speed of the slow-descending device shall stay within the scope of descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Falling test

Article 14 When the speed regulator of the portable slow-descending device is dropped repeatedly for 5 times onto a hard, non-flexible, and smooth horizontal surface from the height of 1.5 meters above the floor level, installed at the test height, and then lowered in the left and the right for one time each with the load that is stipulated in item (i) of Article 9 added in the left and right alternately, the descending speed of the slow-descending device shall stay within the scope of descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Corrosion test

Article 15 By counting the operation of spraying the slow-descending device with salt water for 8 hours with the test method as stipulated in JIS Z 2371 (salt water spray test method) and then leaving it unattended for 16 hours as 1 cycle, when 5 cycles are repeated and then the device is natural dried for 24 hours, and after that, the device is installed at the test height, the load that is stipulated in item (i) of Article 9 is added to one end of the body holder in the left and the right alternately for one time each, and then the device is lowered in the left and the right continuously for one time each, the descending speed of the slow-descending device shall stay within the scope of descending speed as stipulated in the said item, and that the function and the structure of the device shall not fail.

Display

Article 16 The slow-descending device shall have a display of items in each of the following items at an easily seen place in the way the display items do not easily become erased.

1. Model
2. Model number
3. Rope length
4. Maximum working load
5. Maximum number of users
6. Name of the manufacturer or trade mark
7. Manufacturing date
8. Serial number
9. Handling instructions

Exceptions to the standards

Article 17 With regards to slow-descending device that is developed with new technology, in the case the Minister of Internal Affairs and Communications decides that the said slow-descending device has performance equivalent to or more than that of the slow-descending devices conforming to this ministerial order, based on the form, the structure, the materials, and the performance, the said slow-descending device shall be deemed to have met the technical standards set forth by the Minister of Internal Affairs and Communications, regardless of the stipulations in this ministerial order.

Supplementary Provisions

- (1) This Ordinance shall come into effect as of February 1, 1994.
- (2) For the slow-descending device for which the application for the firefighting machines and equipment test, implemented by Japan Fire Equipment Inspection Corporation or an entity that has received designation by the Minister of Home Affairs, shall follow the stipulations in the previous regulations.

Supplementary Provisions

Ordinance of the Ministry of Home Affairs No. 28, dated April 2, 1997

Effective date

- (1) This ministerial order shall take effect on May 1, 1997. Note, however, that the revised stipulations in Article 5 and Article 9 shall take effect on October 1, 1999.

Transitional measure

- (2) With regards to test for the slow-descending device for which the application for the covered machines and equipment test, implemented by Japan Fire Equipment Inspection Corporation, is submitted as of May 1, 1997, shall follow the stipulations in the previous regulations without regards to the stipulations in Item 6, Article 2; Item 8, Article 2; Paragraph 3, Article 3; Article 4; and Article 6, of the post-revision ministerial order to provide technical standards for slow-descending device (hereinafter referred to as “the new ministerial order”).

- (3) The slow-descending device that was currently certified model as of May 1, 1997, and the model certification for the slow-descending device that is received as the result of passing the test in accordance with the stipulations in the previous regulations, in compliance with the stipulations in the previous paragraph, shall be deemed to have received the model certification in the new ministerial order.
- (4) With regards to test for the slow-descending device for which the application for the covered machines and equipment test, implemented by Japan Fire Equipment Inspection Corporation, is submitted as of October 1, 1999, shall follow the stipulations in the previous regulations without regards to the stipulations in Article 5 and Article 9 of the new ministerial order.
- (5) The slow-descending device that was currently certified model as of October 1, 1999, and the model certification for the slow-descending device that is received as the result of passing the test in accordance with the stipulations in the previous regulations, in compliance with the stipulations in the previous paragraph, shall be deemed to have received the model certification in the new ministerial order.

Supplementary Provisions

Ordinance of the Ministry of Home Affairs No. 44, dated September 14, 2000

This ministerial order shall take effect on the effective date (January 6, 2001) for the Law to partially revise the Cabinet Act (Law No. 88 of 1999).