



SLOVENSKI STANDARD

SIST EN 671-1:1997

01-december-1997

Vgrajeni gasilni sistemi - Cevni sistemi - 1. del: Cevni koluti s poltogo cevjo

Fixed firefighting systems - Hose systems - Part 1: Hose reels with semi-rigid hose

Ortfeste Löschanlagen - Wandhydranten - Teil 1: Schlauchanlagen mit formstabilem Schlauch

Installations fixes de lutte contre l'incendie - Systemes équipés de tuyaux - Partie 1: Robinets d'incendie armés équipés de tuyaux semi-rigides

Ta slovenski standard je istoveten z: **EN 671-1:1994**
SIST EN 671-1:1997
<https://standards.iteh.ai/catalog/standards/sist/8021eadd-7b45-4f36-b470-c62e85d3783d/sist-en-671-1-1997>

ICS:

13.220.10	Gašenje požara	Fire-fighting
23.040.70	Gumene cevi in armature	Hoses and hose assemblies

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Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 191 "Fixed firefighting systems", the secretariat of which is held by BSI and through Working Group WG 9 "Hose systems". EN 671 has the general title "Hose systems" and is in two parts, this part and Part 2: Specifications for hose systems with lay-flat hose, and is included in a series of European Standards covering firefighting systems.

This European Standard shall be given the status of a National Standard, either by publication of an identical text or by endorsement, at the latest by May 1995, and conflicting national standards shall be withdrawn at the latest by May 1995.

Users of this European Standard are advised to consider the desirability of independent certification of product conformity with this European Standard based on testing and continuing surveillance, which may be coupled with assessment of a supplier's quality system against EN 29001, EN 29002 and/or EN 29003 as appropriate (see annex H).

Annexes A, B, C, D, E and F are normative. Annexes G and H are informative.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom. (standards.iteh.ai)

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Introduction

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Fire hose reels in proper condition provide a very effective firefighting facility with a continuous supply of water available immediately.

The requirements of this standard have been framed to ensure that hose reels can be operated efficiently by one person and that such systems will have a long service life and will not need excessive maintenance.

1 Scope

This European Standard specifies requirements and methods of test for construction and performance for fire hose reel systems with semi-rigid hose for installation in buildings and other construction works, permanently connected to a water supply, for use by the occupants.

Its requirements may apply in general for other applications, for example in marine applications or in aggressive environments, but additional requirements may be necessary in such cases.

This standard is applicable to both manual or automatic fire hose reels for installation with and without cabinets.

For convenient application in conformity testing the normative annexes of this standard are arranged, so that annex A gives the sequence of testing for conformity assessment and annexes B, C, D, E and F are in the correct sequence for testing.

Annex G gives recommendations for the flowrate, pressure and capacity of water supplies.

NOTE: All pressures are gauge pressures and are expressed in megapascals. 1 MPa = 10 bar.

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2 Normative references

This European Standard incorporates by dated or undated references, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment of revision. For undated reference the latest edition of the publication referred to applies.

prEN 694		Semi-rigid reel hose for first aid fixed installations
ISO 9227	1990	Corrosion tests in artificial atmospheres - Salt spray tests
ISO 3864	1984	Safety colours and signs
ISO/DIS 4892-2.2		Plastics - Methods of exposure to laboratory light sources Part 2: Xenon arc sources

3 Definitions

For the purpose of this standard the following definitions apply:

3.1 manual fire hose reel; manual hose reel: Firefighting appliance consisting of a reel with water supplied through the centre, manual inlet stop valve adjacent to the reel, semi-rigid hose, shut-off nozzle and, where required, a hose guide.

3.2 automatic fire hose reel; automatic hose reel: Firefighting appliance consisting essentially of a reel with water supplied through the centre, automatic inlet stop valve, semi-rigid hose, shut-off nozzle and, where required, a hose guide.

3.3 reel and valve subassembly: That part of a fire hose reel assembly consisting of a reel, automatic inlet stop valve (if fitted) and the connection to the reel, but excluding semi-rigid hose, shut-off nozzle and connectors or couplings.

3.4 fixed fire hose reel; fixed hose reel: Hose reel capable only of rotating in one plane with a hose guide adjacent to the reel.

3.5 swinging fire hose reel; swinging hose reel: Hose reel capable of rotating in more than one plane and mounted on one of the following:

- swinging arm; or
- swinging pipe; or
- swinging door

3.6 shut-off nozzle: Component, at the end of the hose, used to direct and control the discharge of water.

4 Reel

4.1 The reel shall rotate around a spindle.

4.2 The reel shall consist of two wheel discs with a maximum diameter not more than 800 mm, and inside segments or drum with a minimum diameter not less than 200 mm for 19 mm and 25 mm hose and a minimum diameter not less than 280 mm for 33 mm hose.

4.3 Hose reels shall show no visible leakage after rotation when tested in accordance with F.2.

4.4 Swinging hose reels shall show no visible leakage or damage when tested in accordance with F.3.

4.5 The forces to unwind the hose in any horizontal direction shall not exceed the appropriate values given in table 1, when the hose reel is tested in accordance with F.4.

4.6 Rotation of the reel shall stop within one turn when the hose reel is tested in accordance with F.5.

4.7 No permanent deformation shall occur on the reel itself, or of the hose fitting at the reel inlet and outlet when the hose reel is tested in accordance with F.6.

Table 1: Forces to unwind the hose

Hose diameter mm	Maximum initial force N	Maximum force at any point with hose guide N	Maximum force to pull out the entire hose N
19	70	150	250
25	70	200	300
33	100	300	350

5 Hose

5.1 General

The hose shall be semi-rigid and conform to prEN 694.

5.2 Hose bore

The nominal bore of the hose shall be one of the following:

- 19 mm; or
- 25 mm; or
- 33 mm.

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5.3 Maximum length

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The length of the hose in one piece shall not exceed 30 m.

6 Shut-off nozzle

6.1 General

The hose shall terminate in a shut-off nozzle which shall give the following control settings:

- a) shut, and
- b) spray; and/or
- c) jet

NOTE: When both spray and jet are provided it is recommended that the sequence should be as above with the spray setting between the shut setting and the jet setting.

Any spray discharge shall be in the form of either a sheet spray or a conical spray.

6.2 Resistance to impact

The nozzle shall not break or show any visible leakage when tested in accordance with E.1.

6.3 Operating torque

The torque necessary to operate the nozzle to each control setting at maximum working pressure shall not exceed the appropriate value given in table 2 when determined after testing in accordance with E.2.

Table 2: Maximum operating torque of nozzle control according to hose diameter

Control setting	Maximum operating torque in Nm	
	19 mm and 25 mm hose	33 mm hose
Opening	4	7
Spray	4	7
Jet	4	7
Flowrate control	4	7

6.4 Marking of control conditions

6.4.1 Rotary operated nozzles shall be marked to show the direction of closing and opening.

6.4.2 Lever operated nozzles shall be marked to show the settings for

- a) shut; and
- b) spray; and/or jet

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7 Inlet stop valve

7.1 General

A stop valve shall be fitted to the hose reel.

NOTE: It is normally appropriate for valve connections to comply with national standards of the country in which the equipment is to be installed.

7.2 Manual inlet stop valve

NOTE 1: It is recommended that an interlocking device be fitted so that the nozzle cannot be withdrawn unless the water supply is first turned on by opening of the manual stop valve.

NOTE 2: The valve may be of screwdown-type or quick-opening type. In selecting the type of stop valve to be used, the effect of water hammer should be considered.

7.2.1 The valve shall be closed by turning the handle or handwheel in a clockwise direction.

7.2.2 The direction of opening shall be marked.

7.2.3 Screwdown valves shall be fully open after maximum 3½ turns of the handwheel.

7.3 Automatic inlet stop valve

An automatic inlet stop valve shall be fully opened by not more than 3 complete revolutions of the reel. No visible leakage shall occur when tested in accordance with F.2.

8 Cabinets

NOTE: Cabinets may also be used to contain other firefighting equipment, provided that the cabinet is of sufficient size and the equipment does not interfere with the prompt use of the hose reel. Cabinet doors should open approximately 180° to allow the hose to be run out freely in any direction. For service in some climatic conditions it may be necessary to provide the cabinet with suitable ventilating openings.

8.1 General

Cabinets shall be fitted with a door and may be fitted with a lock. Lockable cabinets shall be provided with an emergency opening device, which may be protected only by transparent frangible material. To provide access for inspection and maintenance, the cabinet shall be unlockable with a key.

NOTE: If the emergency opening device is protected by a frangible glass front this should be of the type which when broken does not leave jagged or sharp edges which might cause injury when the emergency opening is operated. Cabinets should be free of sharp edges which might damage the equipment or cause injury.

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8.2 Cabinets for manual hose reels with screwdown type valves

The screwdown valve shall be positioned in such a way that there is at least 35 mm between any part of the cabinet walls and external diameter of the handwheel, when the valve is in any position from fully open to fully closed.

9 Materials

NOTE 1: Where fire hose reels are connected to a public domestic water supply, the appropriate authority may specify materials which are, or are not, acceptable to the authority.

NOTE 2: The advice of the hose reel supplier should be requested in cases of special corrosion risk.

9.1 Resistance to corrosion on coated parts

Any protective coating on metal parts shall provide adequate protection when the parts are tested in accordance with annex B.

9.2 Plastics materials

Plastics materials, excluding any marking plates shall show no signs of cracking or crazing when tested in accordance with annex C.

9.3 Resistance to corrosion of waterways

There shall be no significant corrosion defects and the mechanical operation of all working parts shall be unimpaired when waterways are tested in accordance with annex D.

10 Hydraulic properties

10.1 Resistance to internal pressure

Hose reels shall not leak when tested to the appropriate test pressure given in table 3, in accordance with F.7.

10.2 Strength

Hose reels shall not burst at less than the appropriate minimum burst pressure given in table 3 when tested without the hose in accordance with F.8.

Table 3: Working, test and minimum burst pressure for hose reels

Nominal diameter of hose mm	Working pressure MPa	Test pressure MPa	Minimum burst pressure MPa
19	1,2	1,8	3,0
25	1,2	1,8	3,0
33	0,7	1,05	1,75

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10.3 Minimum flow rate

The flow rates in jet and spray settings shall be not less than the appropriate values given in table 4 when the hose reel is tested in accordance with E.4.1.

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Table 4: Minimum flow rates and minimum k-coefficient according to pressure

Nozzle diameter or equivalent diameter, mm	Minimum flow rate Q l/min			K-coefficient (see note)
	P = 0,2 MPa	P = 0,4 MPa	P = 0,6 MPa	
4	12	18	22	9
5	18	26	31	13
6	24	34	41	17
7	31	44	53	22
8	39	56	68	28
9	46	66	80	33
10	59	84	102	42
12	90	128	156	64

NOTE: Flowrate Q at pressure P is related by the equation $Q = KV(10P)^{1/2}$, where Q is in litres/minute and P is in megapascals.