

SLOVENSKI STANDARD SIST EN 671-1:2001

01-oktober-2001

Nadomešča: SIST EN 671-1:1997

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: Schlauchhaspeln mit formstabilem Schlauch

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Installations fixes de lutte contre lincendie - Systèmes équipés de tuyaux - Partie 1: Robinets d'incendie armés équipés de tuyaux semi-rigides <u>SIST EN 671-1:2001</u>

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ICS:

13.220.10Gašenje požara23.040.70Gumene cevi in armature

Fire-fighting Hoses and hose assemblies

SIST EN 671-1:2001

en



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EUROPEAN STANDARD NORME EUROPÉENNE EUROPÄISCHE NORM

EN 671-1

April 2001

ICS 13.220.20

Supersedes EN 671-1:1994

English version

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

Installations fixes de lutte contre l'incendie - Systèmes équipés de tuyaux - Partie 1: Robinets d'incendie armés équipés de tuyaux semi-rigides Ortfeste Löschanlagen - Wandhydranten - Teil 1: Schlauchhaspeln mit formstabilem Schlauch

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 191 "Fixed firefighting system", the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by October 2001, and conflicting national standards shall be withdrawn at the latest by January 2003.

This European Standard replaces EN 671-1:1994.

EN 671 has the general title "Fixed firefighting systems - Hose systems" and is in three parts;

Part 1: Hose reels with semi-rigid hose

Part 2: Hose systems with lay-flat hose

Part 3: Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association and supports the essential requirements of EU Directive 89/106/EEC.

For relationship with EU Directives, see informative Annex ZA, which is an integral part of this Standard.

Annexes A, B, C, D, E and F are normative. ANDARD PREVIEW

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According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria; Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland; Italy, Luxembourg; Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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Introduction

Fire hose systems 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 the construction and performance of 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 and automatic fire hose reels for installation with and without cabinets.

For convenience of 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.

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 references the latest edition of the publication referred to applies (including amendments).

EN 671-3, Fixed firefighting systems - Hose systems – Part 3: Maintenance of hose reels with semi-rigid hose and hose systems with lay-flat hose.

EN 694:2001, Fire-fighting hoses – Semi-rigid hoses for fixed systems.

EN ISO 4892-2:1999, Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc sources (ISO 4892-2:1994).

ISO 9227:1990, Corrosion tests in artificial atmospheres; salt spray tests.

3 Terms and definitions

For the purposes of this European Standard, the following terms and 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 and swinging 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

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component, at the end of the hose, used to direct and control the discharge of water 101 leeb6eebf6/sist-en-671-1-2001

4 Reel

4.1 The reel shall rotate around a spindle.

4.2 The reel shall consist of two wheels 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 be able to swing to minimum 170° and 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 deformation which may harm the function of the reel shall occur on the reel itself, or of the hose fittings 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 without hose guide, N	Maximum initial force at any point with hose guide, N	Maximum force at any point 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 EN 694:2001.

5.2 Hose bore

The nominal bore of the hose shall be one of the following: iTeh STANDARD PREVIEW

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

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5.3 Maximum length

The length of the hose shall be in one piece and 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 o	perating toro	ue of nozzle contr	ol according to	hose diameter
		peruting tore		or according to	

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

6.4 Marking of control conditions

PRF 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

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spray; and/or jet b)

Inlet stop valve 7

7.1 General

A stop valve shall be fitted to the hose reel.

NOTE It is normally appropriate for valve connections and valve combinations 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.

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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.

NOTE To assist ease of maintenance for hose reels fitted with automatic valves, consideration should be given to water supply isolation valves.

8 Cabinets

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.

If the emergency opening device is protected by a frangible glass front this shall 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 shall be free of sharp edges, which might damage the equipment or cause injury.

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 shall open to minimum 170° 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.

8.2 Cabinets for manual hose reels with screwdown type valves REVIEW

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

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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 external corrosion

Any metal parts shall provide adequate protection when coated parts are tested in accordance with B.1 and uncoated parts are tested in accordance with B.2.

9.2 Plastics materials

9.2.1 Components subjected to pressure

After the ageing test in accordance with Annex C;

- components shall show no leakage when tested at the maximum working pressure in accordance with F.7,

- centre parts shall also meet the requirements of 4.7 when tested in accordance with F.6.2,

- nozzles shall also meet the requirements of 6.2 when tested in accordance with E.1.

9.2.2 Components not subjected to pressure

After the ageing test in accordance with Annex C, all components, excluding any marking plates, shall meet the requirements of 4.7 when tested in accordance with F.6.1.

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
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