



SLOVENSKI STANDARD

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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

Ortsfeste Löschanlagen - Wandhydranten - Teil 1: Schlauchhaspeln mit formstabilem Schlauch

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

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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

Ortsfeste Löschanlagen - Wandhydranten - Teil 1:
Schlauchhaspeln mit formstabilem Schlauch

This European Standard was approved by CEN on 9 March 2012.

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Foreword

This document (EN 671-1:2012) has been prepared by Technical Committee CEN/TC 191 "Fixed firefighting systems", the secretariat of which is held by BSI.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2012 and conflicting national standards shall be withdrawn at the latest by January 2014.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 671-1:2001.

EN 671-1:2001 has been technically revised and editorially edited. The order of clauses has been changed. Annex ZA has been updated.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

For convenience of application in testing, the normative annexes of this European 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.

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.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

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

The requirements of this European Standard have been specified to ensure that hose reels can be operated efficiently by one person and that such systems have a long service life.

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, permanently connected to a water supply, for use by the occupants.

It also provides requirements on evaluation of conformity and marking of these products.

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

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

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2 Normative references

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The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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, *Fire-fighting hoses — Semi-rigid hoses for fixed systems*

EN ISO 4892-2:2006, *Plastics — Methods of exposure to laboratory light sources — Part 2: Xenon-arc lamps (ISO 4892-2:2006)*

EN ISO 9227:2006, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227:2006)*

ISO 7010, *Graphical symbols — Safety colours and safety signs — Registered safety signs*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

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

3.2**fixed fire hose reel; fixed hose reel**

hose reel capable only of rotating in one plane with a hose guide adjacent to the reel

3.3**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

3.4**maximum working pressure**

maximum allowable pressure for which the hose reel is designed

Note 1 to entry: All pressures are gauge pressures and are expressed in Mega Pascal (1 MPa = 10 bar).

3.5**reel and valve subassembly**

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

3.6**shut-off nozzle**

component, at the end of the hose, used to direct and control the discharge of water

3.7**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

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4 Requirements**4.1 General**

Conformity with the requirements given in this Clause 4 shall be verified by testing in accordance with Clause 5.

4.2 Distribution of extinguishing media**4.2.1 Hose bore**

The inside diameter of the hose shall be one of the following:

— 19 mm, or

— 25 mm, or

— 33 mm.

4.2.2 Minimum flow rate

The flow rates in jet and spray settings shall be according to Table 1.

Table 1 — Minimum flow rates and minimum *K*-coefficient according to pressure

Nozzle- or equivalent diameter mm	Minimum flow rate <i>Q</i> l/min			<i>K</i> -coefficient ^a
	<i>P</i> = 0,2 MPa	<i>P</i> = 0,4 MPa	<i>P</i> = 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

^a Flow rate *Q* at a pressure *P* is related to the equation $Q = K \sqrt{10P}$, where *Q* is in l/min and *P* is in MPa.

4.2.3 Effective throw range

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The effective throw ranges of the discharges at a pressure of 0,2 MPa shall not be less than as follows (as appropriate):

- a) jet discharge: 10 m;
- b) sheet spray discharge: 6 m;
- c) conical spray discharge: 3 m.

4.2.4 Spray discharge

Nozzles with a spray setting shall give a spray angle as follows:

- a) sheet spray: $90^\circ \pm 5^\circ$;
- b) conical spray: not less than 45° .

4.3 Operational reliability

4.3.1 Hose — General

The hose shall be semi-rigid and according to EN 694.

4.3.2 Shut-off nozzle — General

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

- a) shut;
- b) spray;
- c) jet.

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.

Trigger operated shut-off nozzles shall be self closing.

4.3.3 Reel – Construction

The reel shall rotate around a spindle.

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.

4.3.4 Reel – Rotating

Hose reels shall show no visible leakage after rotation.

4.3.5 Reel – Swinging

Swinging hose reels shall be able to swing to minimum 170° and show no visible leakage or damage.

4.3.6 Reel – Resistance to impact and load

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.

4.3.7 Shut-off nozzle – Resistance to impact

The nozzle shall not break or show any visible leakage.

4.3.8 Shut-off nozzle – Operating torque

The torque necessary to operate the nozzle to each control setting (i.e. operating, spray, jet or flow rate control) at maximum working pressure shall not exceed 4 Nm for 19 mm and 25 mm diameter hose and 7 Nm for 33 mm diameter hose.

4.3.9 Inlet stop valve – General

A stop valve shall be fitted to the hose reel.

4.3.10 Inlet stop valve – Manual inlet stop valve

The manual inlet stop valve shall be closed by turning the handle or hand wheel in a clockwise direction.

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The direction of opening shall be marked.

Screw down valves shall be fully open after maximum 3½ turns of the hand wheel.

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 screw down-type or quick-opening type. In selecting the type of stop valve to be used, the effect of water hammer should be considered.

4.3.11 Inlet stop valve – 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.

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

4.3.12 Hydraulic properties – Resistance to internal pressure

Hose reels shall not leak.

4.3.13 Hydraulic properties – Strength

Reels shall not burst at less than the appropriate minimum burst pressure given in Table 2.

Table 2 — Maximum working test and minimum burst pressure for hose reels

Inside diameter of hose mm	Maximum 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

4.4 Ability to pull out the hose**4.4.1 Reel — Unwinding load**

The forces to unwind the hose in any horizontal direction shall not exceed the appropriate values given in Table 3.

Table 3 — Forces to unwind the hose

Hose inside 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

4.4.2 Reel — Dynamic braking

Rotation of the reel shall stop within one turn.

4.4.3 Hose — Maximum length

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

4.5 Colour

The colour of the reel shall be red.

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4.6 Shut-off nozzle

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4.6.1 Marking of control conditions - Rotary operated nozzles

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

4.6.2 Marking of control conditions - Lever and trigger operated nozzles

Lever and trigger operated nozzles shall be marked to show the settings for:

- a) shut;
- b) spray;
- c) jet.

4.7 Cabinet

4.7.1 General

Cabinet for a hose reel shall be fitted with a door. Cabinet doors shall open to minimum 170° to allow the hose to be run out freely in any direction. Cabinet shall be free of sharp edges, which might damage the equipment or cause injury.

Lockable cabinet 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.