



# SLOVENSKI STANDARD

## SIST EN 671-2:2012

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Nadomešča:

SIST EN 671-2:2001

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### Vgrajeni gasilni sistemi - Cevni sistemi - 2. del: Cevni koluti s plosko cevjo

Fixed firefighting systems - Hose systems - Part 2: Hose systems with lay-flat hose

Ortfeste Löschanlagen - Wandhydranten - Teil 2: Wandhydranten mit Flachsschläuchen

Installations fixes de lutte contre l'incendie - Systèmes équipés de tuyaux - Partie 2:  
Postes d'eau muraux équipés de tuyaux plats

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13.220.10	Gašenje požara	Fire-fighting
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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## Fixed firefighting systems - Hose systems - Part 2: Hose systems with lay-flat hose

Installations fixes de lutte contre l'incendie - Systèmes équipés de tuyaux - Partie 2: Postes d'eau muraux équipés de tuyaux plats

Ortsfeste Löschanlagen - Wandhydranten - Teil 2: Wandhydranten mit Flachschauch

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

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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**EN 671-2:2012 (E)****Foreword**

This document (EN 671-2:2012) 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of an identical text or by endorsement, at the latest by October 2012 and conflicting national standards shall be withdrawn at the latest by January 2014.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 671-2:2001.

EN 671-2:2001 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 systems 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 system 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 lay-flat hose for installation in buildings, permanently connected to a water supply, for use by the occupants.

Furthermore, it provides also for 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 may be necessary in such cases.

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## 2 Normative references (standards.iteh.ai)

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.

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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 14540, *Fire-fighting hoses — Non-percolating layflat hoses for fixed systems*

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

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation*

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

ISO 5208, *Industrial valves — Pressure testing of metallic valves*

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

**EN 671-2:2012 (E)****3 Terms and definitions**

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

- 3.1 cabinet**  
box to protect the hose system against environmental or physical damage
- 3.2 coupling**  
device used to connect the hose to the valve and to the shut-off nozzle
- 3.3 fire hose system; hose system**  
firefighting appliance consisting essentially of a cabinet or cover, hose support, manual stop valve, lay-flat hose with couplings, shut-off nozzle

- 3.4 hose support**  
device used to hold the hose and shall be one of the following types:

- Type 1: rotating reel;
- Type 2: cradle with the hose double coiled;
- Type 3: hose basket with the hose flaked.

- 3.5 lay-flat hose**  
hose which is flat-sectioned ~~except when it is internally pressurized~~

- 3.6 maximum working pressure**  
maximum allowable pressure for which the hose system is designed

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

[SOURCE: EN 671-1:2012]

- 3.7 shut-off nozzle**  
component, at the end of the hose, used to direct and control the discharge of water

[SOURCE: EN 671-1:2012]

**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 maximum 52 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 $Q$ l/min			$K$ -coefficient <sup>a</sup>
	$P = 0,2$ MPa	$P = 0,4$ MPa	$P = 0,6$ MPa	
9	65	92	113	46
10	78	110	135	55
11	96	136	167	68
12	102	144	176	72
13	120	170	208	85

<sup>a</sup> 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.

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### 4.2.3 Effective throw range

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  $45^\circ$ .

## 4.3 Operational reliability

### 4.3.1 Hose — General

The hose shall be lay-flat and according to EN 14540.

**EN 671-2:2012 (E)****4.3.2 Shut-off nozzle****4.3.2.1 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.

**4.3.2.2 Marking of control condition — Rotary operated nozzles**

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

**4.3.2.3 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.

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**4.3.3 Shut-off nozzle — Resistance to impact**

The nozzle shall not break or show any visible leakage.

**4.3.4 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 7 Nm.

**4.3.5 Inlet stop valve**

A manual stop valve shall be fitted to the hose system.

The valve shall be screw down or other slow-opening type.

The inlet shall be threaded according to ISO 7-1.

The inlet and outlet shall form an angle of not less than 90° and not more than 135°.

The valve shall be closed by turning the handle in a clockwise direction and the direction of opening shall be marked.

When tested in accordance with ISO 5208 for a maximum working pressure of 1,2 MPa the valve shall conform to the appropriate requirements.

#### 4.3.6 Hydraulic properties — Resistance to internal pressure

Hose assemblies shall be designed for the following pressures:

- a) maximum working pressure: 1,2 MPa;
- b) test pressure: 2,4 MPa;
- c) minimum burst pressure: 4,2 MPa.

When tested in accordance with ISO 5208 for a maximum working pressure of 1,2 MPa the valve shall conform to the appropriate requirements.

#### 4.3.7 Hydraulic properties — Security of couplings

Hose assemblies shall not leak when tested to the test pressure in accordance with Annex F.

### 4.4 Ability to pull out the hose

#### 4.4.1 Type 1 Reel

The reel shall rotate around a spindle so that the hose can be withdrawn freely. The inside drum shall have a minimum diameter of not less than 70 mm and shall have a slit not less than 20 mm wide across the full diameter of the drum into which the folded hose is located.

#### 4.4.2 Type 1 and 3 Supports swinging

Types 1 and 3 hose supports, if fixed to the cabinet, shall allow a swing to a position at a minimum of 90° to the plane of the back of the cabinet. The turning axis shall be vertical.

NOTE There are no specific requirements for Type 2.

#### 4.4.3 Hose — Maximum length

For handling reasons the length of the hose should not exceed 20 m.

### 4.5 Colour

The colour of the support shall be red.

### 4.6 Cabinet

#### 4.6.1 General

Cabinet for a hose system 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.

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.

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When transparent material is used as a part of the construction of the door then this shall not be used as the emergency access to the hose system.

Cabinet 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 system.

For service in some climatic conditions it may be necessary to provide the cabinet with suitable ventilating openings.

**4.6.2 Opening/closing device**

An opening/closing device of the cabinet shall be provided to allow periodical inspection and maintenance. The opening device shall have provision for a security seal to be fitted.

The force necessary to open and secure the seal shall be not less than 20 N and not more than 40 N.

**4.6.3 Cabinet for manual hose system with screw down type valve**

The screw down valve shall be positioned in the cabinet for manual hose reel in such a way that there is at least 35 mm free space around the external diameter of the hand wheel, when the valve is in any position from fully open to fully closed.

**4.6.4 Identification symbol**

Hose system cabinet shall be marked with the symbol *Fire hose reel*, Reference nr. F002, in ISO 7010.

NOTE The symbol may have a luminescent surface.

**4.7 Durability aspects**

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**4.7.1 Durability of operational reliability****4.7.1.1 Resistance to external corrosion on coated parts**

Any coated parts of the hose system with lay-flat hose shall provide adequate protection (see Annex B).

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

**4.7.1.2 Resistance to corrosion of waterways**

There shall be no significant corrosion defects (see Annex D) and the mechanical operation of all working parts shall be unimpaired.

**4.7.1.3 Ageing tests for plastics materials**

Samples or test pieces of plastic materials used in components subjected to a mechanical and/or hydraulic effort shall not show cracking or crazing after aging test.

**5 Test methods****5.1 General**

To verify the conformity with the requirements in Clause 4, the following test methods shall be used. The test indicated in clauses shall be carried out according to the sequence shown in Annex A, Table A.1.