

Fixed firefighting systems — Hose systems —

Part 1: Hose reels with semi-rigid hose

The European Standard EN 671-1:2001 has the status of a
British Standard

ICS 13.220.20

National foreword

This British Standard is the official English language version of EN 671-1:2001. EN 671-1:2001 is a candidate “harmonized” European Standard and fully takes into account the requirements of the European Commission mandate M109, “Fixed firefighting systems”, given under the EU Construction Products Directive (89/106/EEC), and intended to lead to CE marking. The date of applicability of EN 671-1:2001 as a harmonized European Standard, i.e. the date after which this standard may be used for CE marking purposes, is subject to an announcement in the *Official Journal of the European Communities*.

EN 671-1:2001 is the subject of transitional arrangements agreed under the European Commission mandate. The Member States have agreed a nominal transition period for the co-existence of EN 671-1:2001 and their corresponding national standard(s). It is intended that this period will comprise a nominal nine month period during which any required changes to national regulations are to be made, followed by a further nominal 12 month period for the implementation of CE marking. At the end of this co-existence period, the national standard(s) will be withdrawn. In the UK, the corresponding national standard is:

— BS EN 671-1:1995, *Fixed firefighting systems — Hose systems — Part 1: Hose reels with semi-rigid hose*;

and based on this nominal transition period of 21 months, BS EN 671-1:1995 would be withdrawn in January 2003.

NOTE This date is approximate. Users of this standard should contact BSI Customer Services for confirmation of withdrawal.

The UK participation in its preparation was entrusted by Technical Committee FSH/18, Fixed firefighting systems, to Subcommittee FSH/18/11, Hose reel systems, which has the responsibility to:

- aid enquirers to understand the text;
- present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;
- monitor related international and European developments and promulgate them in the UK.

A list of organizations represented on this subcommittee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

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Summary of pages

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This European Standard was approved by CEN on 1 March 2001.

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 Management Centre or to any CEN member.

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.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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Contents

Foreword	3
Introduction	4
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Reel	5
5 Hose	6
6 Shut-off nozzle	6
7 Inlet stop valve	7
8 Cabinets	8
9 Materials	8
10 Hydraulic properties	9
11 Colour, symbols, marking and instructions	11
12 Evaluation of conformity	11
Annex A (normative) Schedule for initial type testing	13
Annex B (normative) Test method for resistance to external corrosion	14
Annex C (normative) Ageing test for plastics materials	15
Annex D (normative) Test method for resistance to corrosion of waterways	16
Annex E (normative) Test methods for nozzle	17
Annex F (normative) Test method for physical endurance	20
Annex ZA (informative) Clauses of this European Standard addressing the provisions of EU Construction Products Directive	23
Bibliography	27

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.

This European Standard includes a bibliography.

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.

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.

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

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 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:

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

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 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
Operating	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

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 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.