

SVENSK STANDARD

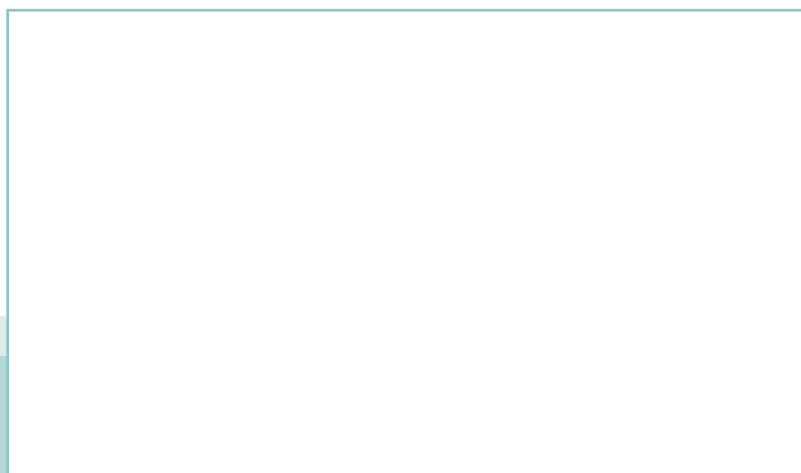
SS-EN 694:2014



Fastställt/Approved: 2014-08-03
Publicerad/Published: 2014-08-20
Utgåva/Edition: 2
Språk/Language: engelska/English
ICS: 13.220.10; 23.040.70

Brand och räddning – Brandslangar – Formstabil slang för fasta släcksystem

Fire-fighting hoses – Semi-rigid hoses for fixed systems



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This standard supersedes the Swedish Standard SS-EN 694+A1:2007, edition 1.

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EUROPEAN STANDARD

EN 694

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2014

ICS 13.220.10; 23.040.70

Supersedes EN 694:2001+A1:2007

English Version

Fire-fighting hoses - Semi-rigid hoses for fixed systems

Tuyaux de lutte contre l'incendie - Tuyaux semi-rigides pour systèmes fixes

Feuerlöschschläuche - Formstabile Schläuche für Wandhydranten

This European Standard was approved by CEN on 14 June 2014.

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.

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 CEN-CENELEC 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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 694:2014) has been prepared by Technical Committee CEN/TC 192 “Fire and Rescue Service Equipment”, 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of an identical text or by endorsement, at the latest by January 2015 and conflicting national standards shall be withdrawn at the latest by January 2015.

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 694:2001+A1:2007.

This revised standard now references EN 15889:2011, *Fire-fighting hoses - Test methods*, which includes the test methods formerly in annexes within EN 694.

The standard is based on liaison with CEN/TC 191 “Fixed fire-fighting systems” and should be read in conjunction with EN 671-1.

Requirements for semi-rigid hoses for use with fire-fighting pumps and vehicles are given in EN 1947; those for non-percolating layflat hoses for fixed systems are given in EN 14540.

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, Former Yugoslav Republic of Macedonia, 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

A fixed system is a manually operated unit installed in a building in order to make it possible for the occupants to control and extinguish a small fire. The system consists of fixed units mounted on walls or in cabinets permanently connected to a water supply. The fixed units are composed of a coupling, a valve, a semi-rigid hose which is water filled or empty fitted on a reel with its support and a nozzle.

The fixed system is specified in EN 671-1, *Fixed firefighting systems - Hose systems - Part 1: Hose reels with semi-rigid hose*.

1 Scope

This European Standard specifies the requirements and test methods for semi-rigid hoses for fire-fighting purposes for use with fixed systems. The hoses are intended for use at a maximum working pressure of 1,2 MPa for hoses of 19 mm and 25 mm inside diameter and 0,7 MPa for hoses of 33 mm inside diameter.

Hoses conforming to this European Standard are intended for applications where long intervals can occur between the occasions of use, for example on fixed fire hose reels in buildings and other construction works.

This European Standard applies exclusively to hoses for fire-fighting purposes intended for use at ambient conditions in non-aggressive or non-corrosive atmospheres within the temperature range $-20\text{ }^{\circ}\text{C}$ to $+60\text{ }^{\circ}\text{C}$.

NOTE 1 Hoses for use at ambient temperatures below $-20\text{ }^{\circ}\text{C}$ can be supplied if they have been tested at the specified lower temperature in accordance with 6.4 and identified by their marking in Clause 8 f).

NOTE 2 All pressures are expressed in megapascals. 1 MPa = 10 bar

2 Normative references

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 15889:2011, *Fire-fighting hoses - Test methods*

EN ISO 176:2005, *Plastics - Determination of loss of plasticizers - Activated carbon method (ISO 176:2005)*

EN ISO 1307, *Rubber and plastics hoses - Hose sizes, minimum and maximum inside diameters, and tolerances on cut-to-length hoses (ISO 1307)*

EN ISO 1402, *Rubber and plastics hoses and hose assemblies - Hydrostatic testing (ISO 1402)*

EN ISO 4671, *Rubber and plastics hoses and hose assemblies - Methods of measurement of the dimensions of hoses and the lengths of hose assemblies (ISO 4671)*

EN ISO 7326:2008, *Rubber and plastics hoses - Assessment of ozone resistance under static conditions (ISO 7326:2006)*

EN ISO 8033, *Rubber and plastics hoses - Determination of adhesion between components (ISO 8033)*

EN ISO 8330, *Rubber and plastics hoses and hose assemblies - Vocabulary (ISO 8330)*

EN ISO 10619-2:2011, *Rubber and plastics hoses and tubing - Measurement of flexibility and stiffness - Part 2: Bending tests at sub-ambient temperatures (ISO 10619-2:2011)*

3 Terms and Definitions

For the purposes of this standard the following definition applies, together with those for working pressure, proof pressure and burst pressure given in EN ISO 8330.

3.1

semi-rigid hose

hose which maintains its round cross-section even when unpressurized

4 Classification

4.1 General

All types and classes of hoses shall be so flexible that they can be rolled and kept on a drum of minimum diameter 200 mm for 19 mm and 25 mm inside diameter hose and of minimum diameter 280 mm for 33 mm inside diameter hose.

Hoses shall be one of two types distinguished by their construction. Each hose type shall be further divided into classes distinguished by the materials used for lining and cover.

4.2 Classification by types (hose construction)

Type A hoses shall consist of:

- a) a seamless rubber or plastics lining;
- b) a textile reinforcement with or without a rigid spiral helix;
- c) a rubber or plastics cover.

Type B hoses shall consist of:

- d) a seamless rubber or plastics lining;
- e) a circular woven textile reinforcement with a rigid spiral helix;
- f) an uncovered or rubber or plastics cover.

4.3 Classification by class (materials for lining and cover)

The hose types shall be further subdivided into six classes dependent on the materials used in the construction in accordance with Table 1.

Table 1 — Classes and materials

Class	Lining material	Cover material
1	rubber	rubber
2	plastics	plastics
3	rubber	plastics
4	plastics	rubber
5	rubber	no cover
6	plastics	no cover

5 Dimensions, tolerances and maximum mass

5.1 Inside diameter and maximum mass

The inside diameter of the hose, when measured in accordance with EN ISO 4671, shall conform to the requirements given in Table 2. The mass per metre length of the hose shall be in accordance with Table 2.

Table 2 — Inside diameter, tolerances on inside diameter and maximum mass per unit length

Inside diameter mm	Tolerances for inside diameter mm	Maximum mass per unit length	
		kg/m	
		Type A	Type B
		max.	max.
19	-0,5 to +1,0	0,75	0,25
25	±1,0	0,90	0,35
33	-1,0 to +1,5	1,00	0,50

5.2 Length and tolerances on length

The total length of hose supplied shall be stated in metres.

Tolerance on length shall be in accordance with EN ISO 1307.

6 Performance requirements of finished hose

6.1 Hydrostatic requirements

6.1.1 Deformation under maximum working pressure

The dimensional stability of the hose, when tested in accordance with EN ISO 1402, shall conform to the requirements given in Table 3. The length of the test piece shall be 1 m.

For 19 mm and 25 mm inside diameter hoses the initial test pressure shall be 0,07 MPa and the final test pressure shall be 1,2 MPa. For 33 mm inside diameter hose the initial test pressure shall be 0,07 MPa and the final test pressure shall be 0,7 MPa.

The twist shall be not greater than 30°/m for type A. For type B the twist may be greater than 30°/m but in this case it shall only be in a direction which closes the coupling and shall be stated in the test report.

Table 3 — Change in length and external diameter

	Tolerances for type A	Tolerances for type B
	%	%
Change in length	0 to +7,5	0 to +5,0
Change in external diameter	0 to +7,5	0 to +5,0