



SLOVENSKI STANDARD

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Fixed firefighting systems - Foam systems - Part 1: Requirements and test methods for components

Ortsfeste Brandbekämpfungsanlagen - Schaumlöschanlagen - Teil 1: Anforderungen und Prüfverfahren für Bauteile

Installations fixes de lutte contre l'incendie - Systèmes à émulseurs - Partie 1 : Exigences et méthodes d'essais relatives aux composants

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13.220.10 Gašenje požara Fire-fighting

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Fixed firefighting systems - Foam systems - Part 1: Requirements and test methods for components

Installations fixes de lutte contre l'incendie - Systèmes
à émulseurs - Partie 1 : Exigences et méthodes d'essais
relatives aux composants

Ortsfeste Brandbekämpfungsanlagen -
Schaumlöschanlagen - Teil 1: Anforderungen und
Prüfverfahren für Bauteile

This European Standard was approved by CEN on 8 February 2019.

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

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Contents	Page
European foreword.....	5
1 Scope.....	7
2 Normative references.....	7
3 Terms and definitions.....	8
4 General construction requirements	11
4.1 Connections.....	11
4.2 Parts intended for removal during routine field maintenance.....	11
4.3 Hydrostatic strength.....	12
4.4 Castings.....	12
4.5 Corrosion resistance of metal parts.....	12
4.6 Elastomers.....	13
4.7 Plastics and reinforced resin materials.....	13
4.8 Heat and fire resistance.....	14
4.9 Components for low expansion foam systems	14
4.10 Components for medium and high expansion foam systems.....	15
4.11 Tanks and pressure vessels for foam concentrates or solutions.....	16
5 Performance Characteristics of Foam Components.....	17
5.1 Discharge coefficients and characteristics of branchpipes, sprayers and low and high back pressure foam generators	17
5.2 Quality of foam from aspirating components.....	17
5.3 Accuracy of proportioning components.....	17
6 Documentation	18
6.1 Preparation and maintenance	18
6.2 Installation and user documentation	18
6.3 Design documentation	18

7	Marking	18
8	Evaluation of conformity - Initial type testing	19
8.1	Conformity	19
8.2	Modification	19
8.3	Prior testing	19
8.4	Grouping	19
8.5	Related components	19
8.6	Normal production	20
8.7	Reference samples	20
8.8	Test sequence	20
Annex A	(normative) Hydrostatic test	21
A.1	General	21
A.2	Leak test	21
A.3	Mechanical strength	21
Annex B	(normative) Ageing test for plastics, thermoplastics or thermosets; and reinforced resin materials	22
B.1	General	22
B.2	Tensile strength and elongation test	22
B.3	Impact test	22
Annex C	(normative) Liquid exposure test	23
Annex D	(normative) Heat and fire resistance test for foam generators	24
Annex E	(normative) Flow tests	25
E.1	General	25
E.2	Discharge coefficient	25
E.3	Discharge characteristic	25
Annex F	(normative) Quality of foam from aspirating components	26

EN 13565-1:2019 (E)

F.1	General	26
F.2	Low expansion foams	26
F.3	Medium expansion foams	26
Annex G	(normative) High expansion foam generator test	27
Annex H	(normative) Range tests for branchpipes	28
Annex I	(normative) Area coverage test for foam sprayers and nozzles	29
Annex J	(normative) Maximum flow and back pressure	31
J.1	General	31
J.2	Flow	31
J.3	Back pressure	31
J.4	Vapour seals	31
J.4.1	Vapour seal – upstream (foam inlet side)	31
J.4.2	Vapour seal – downstream (tank side)	32
Annex K	(normative) Insertion and deployment of semi-subsurface hose	33
Annex L	(normative) Salt spray corrosion test	34
Annex M	(normative) Stress corrosion test	35
Annex N	(normative) Internal corrosion test	36

European foreword

This document (EN 13565-1:2019) has been prepared by Technical Committee CEN/TC 191, “Fixed firefighting systems” 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 November 2019, and conflicting national standards shall be withdrawn at the latest by November 2019.

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

This document will supersede EN 13565-1:2003+A1:2007.

Compared to the previous edition, the following changes have been made:

- 1) the foreword has been updated;
- 2) normative references have been updated;
- 3) 4.1 revised;
- 4) 4.4 revised;
- 5) 4.5 revised;
- 6) 4.6 revised; <https://standards.iteh.ai/catalog/standards/sist/68060fe1-3dd3-4275-b987-3c9a133abd44/sist-en-13565-1-2019>
- 7) 4.9 replaces Clause 8;
- 8) 4.10 replaces Clause 9;
- 9) 4.11 replaces Clause 10;
- 10) Clause 5 changed to ‘performance characteristics of foam components’;
- 11) Clause 6, new clause ‘documentation’;
- 12) Clause 7 replaces Clause 11;
- 13) Clause 8 replaces Clause 12;
- 14) Annex A revised;
- 15) Annex E requirements clause reference added;
- 16) Annex F requirements clause reference added.
- 17) Annex G revised;

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EN 13565-1:2019 (E)

- 18) Annex H revised;
- 19) Annex I revised;
- 20) Annex J revised;
- 21) Annexes K, L, M, N added.

EN 13565, *Fixed firefighting systems — Foam systems*, is currently composed with the following parts:

- *Part 1: Requirements and test methods for components;*
- *Part 2: Design, construction and maintenance.*

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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1 Scope

The requirements of this document set out the materials, construction, and performance of components intended for use in fixed foam fire fighting systems, and using foam concentrates conforming to EN 1568-1 to EN 1568-4. The components covered are: proportioners, sprayers, semi-subsurface hose units, branchpipes, low/medium expansion foam generators, high expansion foam generators, foam chambers, tanks and pressure vessels. Methods of test are given in Annex A to Annex K.

Requirements are also given for the provision of the characteristic data needed for correct application of components.

NOTE 1 Unless otherwise stated pressures are gauge pressures expressed in bar.

The requirements of this document do not cover, except where stated, the use of combinations of components to form part, or the whole, of a fire fighting system.

NOTE 2 Components conforming to this document are not necessarily compatible one with another.

Requirements for pumps, motors and the functioning of mechanical components (i.e. remote control turrets) are outside the scope of this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1568-1:2018, *Fire extinguishing media — Foam concentrates — Part 1: Specification for medium expansion foam concentrates for surface application to water-immiscible liquids*

EN 1568-2:2018, *Fire extinguishing media — Foam concentrates — Part 2: Specification for high expansion foam concentrates for surface application to water-immiscible liquids*

EN 1568-3:2018, *Fire extinguishing media — Foam concentrates — Part 3 Specification for low expansion foam concentrates for surface application to water-immiscible liquids*

EN 1568-4:2018, *Fire extinguishing media — Foam concentrates — Part 4: Specification for low expansion foam concentrates for surface application to water-miscible liquids*

EN 12259-1:1999+A1:2001, *Fixed fire fighting systems — Components for sprinkler and water spray systems — Part 1: Sprinklers*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN designated — Part 1: Steel flanges*

EN 12542, *LPG equipment and accessories — Static welded steel cylindrical tanks, serially produced for the storage of Liquefied Petroleum Gas (LPG) having a volume not greater than 13 m³ — Design and manufacture*

EN 13565-1:2019 (E)

EN ISO 225, *Fasteners — Bolts, screws, studs and nuts — Symbols, designations and dimensions (ISO 225)*

EN ISO 175, *Plastics — Methods of test for the determination of the effects of immersion in liquid chemicals (ISO 175)*

EN ISO 179-1, *Plastics — Determination of Charpy impact properties — Part 1: Non-instrumented impact test (ISO 179-1)*

EN ISO 180, *Plastics — Determination of Izod impact strength (ISO 180)*

EN ISO 527-1, *Plastics — Determination of tensile properties — Part 1: General principles (ISO 527-1)*

EN ISO 898-1, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 1: Bolts, screws and studs with specified property classes — Coarse thread and fine pitch thread (ISO 898-1)*

EN ISO 898-2, *Mechanical properties of fasteners made of carbon steel and alloy steel — Part 2: Nuts with specified property classes — Coarse thread and fine pitch thread (ISO 898-2)*

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

ISO 888, *Fasteners — Bolts, screws and studs — Nominal lengths and thread lengths*

ISO 4633, *Rubber seals — Joint rings for water supply, drainage and sewerage pipelines — Specification for materials*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

Nordtest method NT Fire 042 Foam Concentrate Proportioner Performance Test

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

component

item or piece of equipment intended for use in a fixed foam fire extinguishing system

3.2

aspirating component

component within which air and foam solution are mixed to make foam

3.3**non-aspirating component**

components which discharge a spray of foam solution so that mixing with air and formation of foam takes place outside the component

3.4**proportioning component**

component which controls the mixing of foam concentrate into a water flow, at a predetermined ratio, to produce a foam solution

Note 1 to entry: Proportioning components are variously described as inline, bypass and round the pump inductors, injectors, eductors, proportioners, venturis, constant and variable flow valves, orifice plates, water powered foam pumps and displacement proportioners.

3.5**single orifice component**

component in which liquid flows through a single flow controlling orifice

3.6**multiple orifice component**

component in which liquid flows simultaneously through more than one flow controlling orifice

3.7**branchpipe**

component which projects foam in the form of a jet or spray

3.8**foam chamber**

component that incorporates a vapour seal, a foam expansion chamber, and which delivers foam into a flammable or combustible liquid storage tank

Note 1 to entry: A foam generator can be connected to the foam chamber inlet.

3.9**foam generator**

component which introduces air into the foam solution stream for delivery against a low back pressure, i.e. discharging against atmospheric pressure

3.10**high back pressure foam generator**

component which introduces air into the foam solution stream for delivery against a high back pressure, for example, as is found in tank sub-surface injection

3.11**monitor**

component consisting of a branchpipe or jet/fog nozzle and turret

Note 1 to entry: This standard is considering the mechanical properties and foam discharge performance only. Different types of operation (electrically, hydraulically, water motor oscillating) are not subject of this standard.

EN 13565-1:2019 (E)**3.12****foam pourer (foam discharge outlet)**

component which discharges foam gently and indirectly onto the fuel surface

Note 1 to entry: Some pourers are designed to discharge the foam tangentially in order to create a circular motion, and thus promote foam distribution.

3.13**semi-subsurface hose unit**

component which delivers foam below the surface of a flammable liquid so that it rises to the liquid surface within a flexible hose and spreads over the liquid surface

3.14**turret**

device on which a foam branchpipe is mounted to allow rotation and elevation

Note 1 to entry: The requirements for the testing of turrets are outside the scope of this standard.

3.15**vapour seal**

frangible component designed to prevent tank contents vapours entering the foam pipework system while allowing foam to flow into the tank during system operation

3.16**sprayer**

open nozzle which discharges a spray of foam or foam solution

Note 1 to entry: The terms sprayer and nozzle are regarded as interchangeable.

3.17**low expansion foam**

foam which has an expansion ratio not greater than 20

[SOURCE: EN 1568-4:2018, 3.3]

3.18**medium expansion foam**

foam which has an expansion ratio greater than 20 but not greater than 200

[SOURCE: EN 1568-4:2018, 3.4]

3.19**high expansion foam**

foam which has an expansion ratio greater than 200

[SOURCE: EN 1568-4:2018, 3.5]

3.20**working pressure**

pressure at which the component is used in the system