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Vgrajeni gasilni sistemi - Sistemi za gašenje s peno - 1. del: Zahteve in preskusne metode za sestavne dele

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

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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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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European foreword

This document (prEN 13565-1:2016) has been prepared by Technical Committee CEN /TC 191, "Fixed firefighting systems" the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

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

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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*.

Annexes A to K are normative.

1 Scope

This European Standard specifies requirements for 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 Annexes A to K.

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

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

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

It should not be assumed that components conforming to this specification are 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 standard.

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

EN 1568-1:2000, *Fire extinguishing media — Foam concentrates — Part 1: Specification for medium expansion foam concentrates for surface application to water-immiscible liquids*

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

EN 1568-3:2000, *Fire extinguishing media — Foam concentrates — Part 3: Specification for low expansion foam concentrates for surface application to water-immiscible liquids*

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

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

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 m^3 — Design and manufacture*

EN 20225, *Fasteners — Bolts, screws, studs and nuts — Symbols, designations and dimensions (ISO 225:1983)*

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)*

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

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*

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.

3.1
aspirating component
component within which air and foam solution are mixed to make foam

3.2
branchpipe
component which projects foam in the form of a jet or spray

3.3
component
item or piece of equipment intended for use in a fixed foam fire extinguishing system

3.4
discharge coefficient (K factor)
'K' factor for the formula $Q = K\sqrt{dP}$ where Q is the flow rate through the component in l/min and dp is the inlet pressure in bar

3.5
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

3.6
high expansion foam
foam which has an expansion ratio greater than 200

3.7
foam generator
component which introduces air into the foam solution stream for delivery against a low back pressure, i.e. discharging against atmospheric pressure

3.8
low expansion foam
foam which has an expansion ratio not greater than 20

3.9
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 may be connected to the foam chamber inlet.

3.10
medium expansion foam
foam which has an expansion ratio greater than 20 but not greater than 200

3.11
monitor
component consisting of a branchpipe and turret

3.12
non-aspirating components
components which discharge a spray of foam solution so that mixing with air and formation of foam takes place outside the component

3.13
fixed foam pourer
foam discharge outlet
component which discharges foam onto the internal wall of a tank

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.

3.14
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.

3.15
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

3.16
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
supplier
company with or without production facilities for components but responsible for the quality control, conformity and supply of the components

3.18
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.

3.19
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

3.20
working pressure
pressure at which the component is used in the system

3.21
single orifice component
component in which liquid flows through a single flow controlling orifice

3.22
multiple orifice component
component in which liquid flows simultaneously through more than one flow controlling orifice