



SLOVENSKI STANDARD
SIST EN 14972-8:2020

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Vgrajeni gasilni sistemi - Sistemi s pršečo vodo - 8. del: Protokol preskušanja sistemov z odprtimi šobami za požarno zaščito strojev v ohišjih nad 260 m³

Fixed firefighting systems - Water mist systems - Part 8- Test protocol for machinery in enclosures exceeding 260 m³ for open nozzle systems

Ortsfeste Brandbekämpfungsanlagen - Feinsprüh-Löschanlagen - Teil 8: Prüfprotokoll für Maschinen in Gehäusen über 260 m³ für offene Düsensysteme

Installations fixes de lutte contre l'incendie - Systèmes à brouillard d'eau - Partie 8 : Protocole d'essai des systèmes à buses ouvertes pour machines situées dans des enceintes de plus de 260 m³

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ICS:

13.220.10 Gašenje požara Fire-fighting

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EUROPEAN STANDARD

EN 14972-8

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English Version

Fixed firefighting systems - Water mist systems - Part 8- Test protocol for machinery in enclosures exceeding 260 m³ for open nozzle systems

Installations fixes de lutte contre l'incendie - Systèmes
à brouillard d'eau - Partie 8 : Protocole d'essai des
systèmes à buses ouvertes pour machines situées dans
des enceintes de plus de 260 m³

Ortsfeste Brandbekämpfungsanlagen - Feinsprüh-
Löschanlagen - Teil 8: Prüfprotokoll für Maschinen in
Gehäusen über 260 m³ für offene Düsensysteme

This European Standard was approved by CEN on 11 November 2019.

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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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 14972-8:2020) 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of an identical text or by endorsement, at the latest by July 2020 and conflicting national standards shall be withdrawn at the latest by July 2020.

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.

EN 14972, *Fixed firefighting systems — Water mist systems* consists of the following parts:

- Part 1: *Design, installation, inspection and maintenance;*
- Part 2: *Test protocol for shopping areas for automatic nozzle systems;*
- Part 3: *Test protocol for office, school and hotel for automatic nozzle systems;*
- Part 4: *Test protocol for non-storage occupancies for automatic nozzle systems;*
- Part 5: *Test protocol for car garages for automatic nozzle systems;*
- Part 6: *Test protocol for false floors and false ceilings for automatic nozzle systems;*
- Part 7: *Test protocol for commercial low hazard occupancies for automatic nozzle systems;*
- Part 8: *Test protocol for machinery in enclosures exceeding 260 m³ for open nozzle systems;*
- Part 9: *Test protocol for machinery in enclosures not exceeding 260 m³ for open nozzle systems;*
- Part 10: *Test protocol for atrium protection with sidewall nozzles for open nozzle systems;*
- Part 11: *Test protocol for cable tunnels for open nozzle systems;*
- Part 12: *Test protocol for commercial deep fat cooking fryers for open nozzle systems;*
- Part 13: *Test protocol for wet benches and other similar processing equipment for open nozzle systems;*
- Part 14: *Test protocol for combustion turbines in enclosures exceeding 260 m³ for open nozzle systems;*
- Part 15: *Test protocol for combustion turbines in enclosures not exceeding 260 m³ for open nozzle systems;*
- Part 16: *Test protocol for industrial oil cookers for open nozzle systems;*
- Part 17: *Test protocol for residential occupancies for automatic nozzle systems.*

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

EN 14972-8:2020 (E)**1 Scope**

This document specifies fire testing requirements for water mist systems used for fire protection of machinery in enclosures with volumes exceeding 260 m³.

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 14972-1:—¹⁾, *Fixed firefighting systems — Water mist systems — Part 1: Design, installation, inspection and maintenance*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 14972-1¹⁾ and the following apply.

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

— ISO Online browsing platform: available at <http://www.iso.org/obp>

— IEC Electropedia: available at <https://www.electropedia.org/>

3.1 machinery enclosure iTeh STANDARD PREVIEW
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<water mist systems> any enclosure containing equipment that uses fuel and/or lubrication fluids with volatilities less than or equal to heptane SIST EN 14972-8:2020

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4 General requirements

4.1 The water mist system, operating without manual intervention, shall successfully complete all described performance fire tests for their specific applications.

4.2 The fire tests shall be conducted until the fire is extinguished, as required by the applicable fire test.

4.3 System components, component locations, operating conditions and test enclosure details shall remain unaltered throughout all of the fire tests for a given application.

4.4 All fire tests shall be conducted using the specifications from the manufacturer's DIOM manual in regard to nozzle placement, spray flux, and spray duration. Sprays can be continuous or intermittent in time. In the case of intermittent, or cycled, sprays, the time period during which the system is not discharging shall not be greater than 50 % of one complete on/off cycle. The system off period shall not exceed one minute.

4.5 In conjunction with the performance fire tests, all twin fluid water mist systems (except for those applying compressed air) shall be subjected to a straight discharge test with no fire to evaluate the resulting discharge and oxygen concentration. This evaluation shall be conducted using the maximum extinguishing agent flow and pressure. The discharge duration for the test shall be the maximum required for the system and occupancy to be protected. Oxygen measurements shall be recorded at a

1) Under preparation. Stage at the time of publication: prEN 14972-1:2019.

location(s) within the test enclosure. This information shall be used to evaluate personnel safety, and shall be accounted for in the manufacturer's DIOM manual.

4.6 Up to a maximum of 5 nozzles used in the fire tests shall be kept for later verification.

5 Test enclosure requirements

The maximum enclosure volume (as specified by the manufacturer) shall be tested. The enclosure area should be preferable squared. If this is not possible length sides shall not exceed 2.5:1 ratio. In any case, the length of any of the sides shall be at least 8,00 m.

The maximum enclosure height (as specified by the manufacturer) shall be tested. The enclosure shall be constructed of wood or metal frame with an inner lining of minimum 13,00 mm gypsum or 0,70 mm galvanized steel.

To minimize leakages, all joints and gaps shall be sealed. An opening measuring 2,00 m by 2,00 m and 0,50 m above the floor level shall be installed in the centre of one wall, as shown in Figure 1.

A minimum of two hinged ceiling hatches measuring approximately 1,00 m by 2,00 m shall be installed in opposite diagonal corners for heat and smoke release at the conclusion of the fire test. The floor shall be non-combustible and any floor drainage or vent openings shall be sealed during testing.

A small vent can be provided to allow the intake of air, to prevent excessive suctioning of the walls and ceiling and maintain structural integrity of the fire test enclosure.

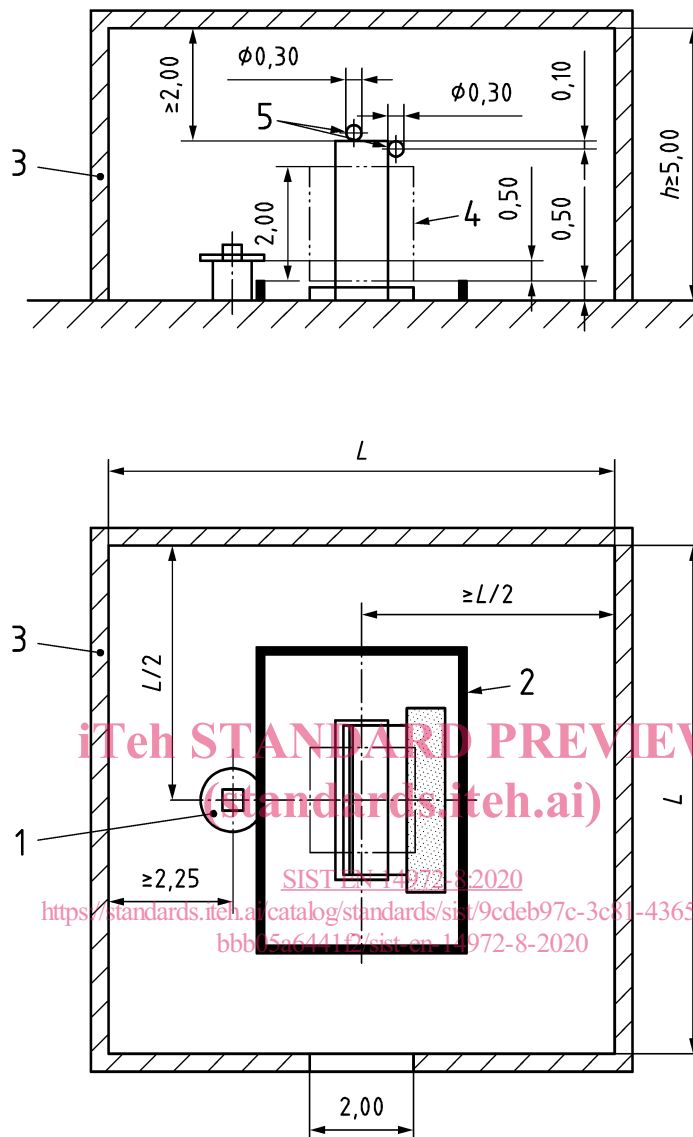
The machinery mock-up unit shall be centred in the test enclosure.

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Dimensions in metres

**Key**

- 1 tray for "Class A Fire Test"
- 2 bilge enclosure
- 3 test enclosure
- 4 opening
- 5 steel pipe

Figure 1 — Test enclosure

6 Machinery mock-up requirement

The machinery mock-up unit measures 3,00 m long by 1,00 m wide by 3,00 m high. It is fabricated from sheet steel with a nominal thickness of 5,00 mm. A tray with a depth of 100,00 mm is formed at the top of the mock-up unit. Two 300,00 mm diameter pipes, 3,00 m in length, are attached to the unit to simulate obstructions. A 0,70 m wide solid shelf is also connected to the unit, which provides a barrier to allow shielded fire tests to be conducted.

A 200,00 mm by 50,00 mm notch is cut into the side of the top tray opposite the solid shelf for the purposes of the flowing fire test (see Figure 2 and 3).

The mock-up unit shall be surrounded by a steel floor plate system, 6,00 m long by 4,00 m wide by 0,75 m high.

A 4,00 m² by 0,254 m high square tray shall be located underneath the floor plate system.

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