



# SLOVENSKI STANDARD SIST EN 14972-11:2023

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## Vgrajeni gasilni sistemi - Sistemi s pršečo vodo - 11. del: Protokol preskušanja sistemov z odprtimi šobami za kabelske hodnike

Fixed firefighting systems - Water mist systems - Part 11: Test protocol for cable tunnels for open nozzle systems

Ortsfeste Brandbekämpfungsanlagen - Wassernebelsysteme - Teil 11: Prüfprotokoll für Kabeltunnel für offene Düsensysteme

Installations fixes de lutte contre l'incendie - Systèmes à brouillard d'eau - Partie 11 : Protocole d'essai des systèmes à buses ouvertes pour galeries de câbles

Ta slovenski standard je istoveten z: **EN 14972-11:2023**

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EUROPEAN STANDARD

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## Fixed firefighting systems - Water mist systems - Part 11: Test protocol for cable tunnels for open nozzle systems

Installations fixes de lutte contre l'incendie - Systèmes  
à brouillard d'eau - Partie 11 : Protocole d'essai des  
systèmes à buses ouvertes pour galeries de câbles

Ortsfeste Brandbekämpfungsanlagen -  
Wassernebelsysteme - Teil 11: Prüfprotokoll für  
Kabeltunnel für offene Düsensysteme

This European Standard was approved by CEN on 17 April 2023.

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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## European foreword

This document (EN 14972-11:2023) 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 2023, and conflicting national standards shall be withdrawn at the latest by November 2023.

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.

The EN 14972 series, published under the general title *Fixed firefighting systems — Water mist systems*, consists of the following parts. This list includes standards that are in preparation, and other standards can be added. For the current status of published standards, refer to [www.cencenelec.eu](http://www.cencenelec.eu).

- *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 classrooms 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 m<sup>3</sup> for open nozzle systems;*
- *Part 9: Test protocol for machinery in enclosures not exceeding 260 m<sup>3</sup> 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 m<sup>3</sup> for open nozzle systems;*
- *Part 15: Test protocol for combustion turbines in enclosures not exceeding 260 m<sup>3</sup> 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.*

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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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, Türkiye and the United Kingdom.

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN 14972-11:2023](https://standards.iteh.ai/catalog/standards/sist/44ab9a80-8637-4a5f-a2d1-48ace744e1e7/sist-en-14972-11-2023)

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## 1 Scope

This document specifies fire testing requirements for water mist systems used for fire protection of cable tunnels. The test protocol covers deluge water mist systems with open nozzles which are either activated with an automatic release system, e.g. fire detection system, or manually released.

## 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 13501-1:2018, *Fire classification of construction products and building elements - Part 1: Classification using data from reaction to fire tests*

EN 14972-1:2020, *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 14972-1 apply.

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

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

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

## 4 General requirements

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

4.2 The water mist system, operating without manual intervention, shall successfully complete all described performance fire tests.

4.3 The fire load shall be taken from the conditioning area and arranged into the test area just before conducting the test.

4.4 The water flow shall be shut-off 15 min after the activation. After turning off the system, no more than small localized flamelets on a single tray and no smouldering are allowed and the fire damages shall be recorded.

4.5 Prior to the testing, a layout of the water mist system to be tested shall be submitted for test preparation purposes. This layout shall include any components required for the testing as well as the full dimensioning (e.g. length of pipes, distances of nozzles, etc.).

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

4.7 All fire tests shall be conducted using the manufacturer instructions in regard to nozzle placement, spray flux, and operating pressure. Sprays shall not be intermittent.

4.8 The water supply shall be capable of supplying a flow rate and pressure at the minimum operating pressure and flow rate of the open nozzle as specified by the manufacturer. These parameters shall be met based on the actual layout of the pipework installation as used in the test scenario.

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4.9 The tests with the water mist system shall be conducted at maximum spacing and minimum discharge conditions regarding water flow and pressure as specified by the manufacturer for this application. The system shall be installed to achieve the maximum allowed time delay of water pressure build-up of the system.

## 5 Fuel packages

### 5.1 General

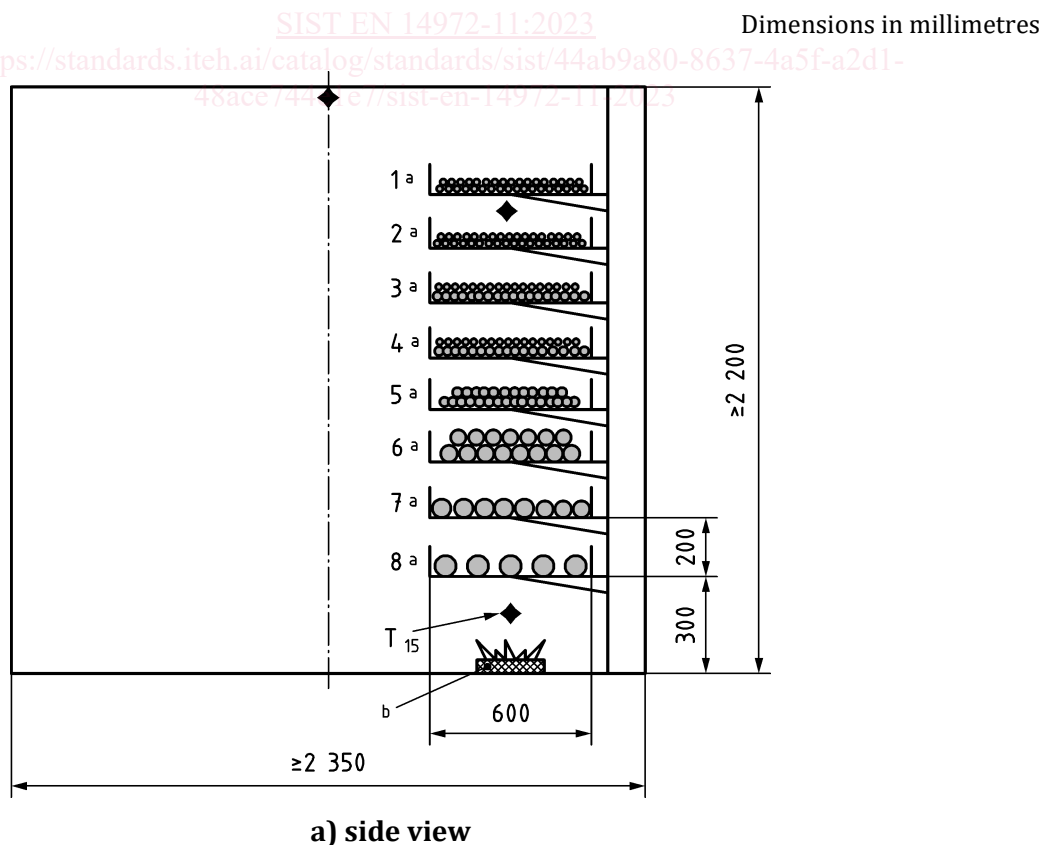
The test assembly to be provided for the tests by the applicant shall comply with the following specifications and figures.

The test scenario is based on a typical tunnel layout comprising the appropriate fire load in terms of cabling.

The test assembly shall include the following elements:

- test tunnel enclosure;
- cable trays;
- cables fire load;
- ignition source;
- ventilation.

Figure 1 shows an example of the test assembly in accordance with the requirements specified in this clause.







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All machinery needed to establish the ventilation shall be placed outside of the above described minimum length.

**5.3 Cable tray arrangement**

The cable trays shall be of non-combustible material (class A1 according to EN 13501-1:2018).

The cable trays shall be of open ladder type or of similar construction. The cable trays shall not have a solid base.

The position of the tray nearest to the floor shall be at least 300 mm above floor.

The cable trays shall have a width of at least 600 mm. The use of cable trays with a greater width is up to the manufacturer.

The vertical distance between two cable trays shall be 200 mm.

The horizontal distance between the cable trays and the wall of the enclosure shall be 200 mm.

The test can be carried out either with one stack of cable trays on one side of the cable tunnel enclosure or with two stacks of cable trays on both sides of the enclosure.

Arrangements of more cable trays above each other are up to the manufacturer.

**5.4 Cable fire load**

The fire load shall consist of cables with different dimensions.

For greater fire loads, the distribution percentage of different cable sizes shall be retained. Cables with larger diameters shall preferably be positioned in the lower cable trays.

The cables given in Table 1 shall be used for the tests.

**Table 1 — Cable fire load**

Tray	Cable type	Diameter mm	CU number	Number of cables	Total length <sup>a</sup> m
1	NYO 2 × 1,5	12	29	35	525
2	NYO 2 × 1,5	12	29	30	450
	J-Y(St)Y 12 × 2 × 0,8	14	123	10	150
3	J-Y(St)Y 12 × 2 × 0,8	14	123	20	300
	NYO-J 4 × 10	20	384	20	300
4	J-Y(St)Y 12 × 2 × 0,8	14	123	20	300
	NYO-J 4 × 10	20	384	10	150
5	NYO-J 4 × 10	20	384	30	450
6	NYO-J 3 × 50/25	31	1680	15	225
7	NYO-J 3 × 50/25	31	1680	3	45
	NYO-J 4 × 120	42	4608	5	75
8	NYO-J 4 × 120	42	4608	5	75

<sup>a</sup> Cable length may be reduced if the fire does not extend to the cable ends during the tests.