SLOVENSKI STANDARD
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Sistemi za odkrivanje in javljanje požara ter alarmiranje - 22. del: Linijski toplotni javljalniki z možnostjo ponastavitve

Fire detection and fire alarm systems - Part 22: Resettable line-type heat detectors

Brandmeldeanlagen - Teil 22: Rücksetzbare linienförmige Wärmemelder

Systèmes de détection et d'alarme incendie - Partie 22: Détecteurs de chaleur de type linéaire réenclenchables

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Fire detection and fire alarm systems - Part 22: Resettable line-type heat detectors

Systèmes de détection et d'alarme incendie - Partie 22: Détecteurs de chaleur de type linéaire réenclenchables

Brandmeldeanlagen - Teil 22: Rücksetzbare linienförmige Wärmemelder

This draft amendment is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 72.

This draft amendment A1, if approved, will modify the European Standard EN 54-22:2015. If this draft becomes an amendment, CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for inclusion of this amendment into the relevant national standard without any alteration.

This draft amendment was established by CEN 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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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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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 54-22:2015/prA1:2017) has been prepared by Technical Committee CEN/TC 72 “Fire detection and fire alarm systems”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Regulation 305/2011.

For relationship with EU Directive, see informative Annex ZA, which is an integral part of EN 54-22:2015.

1 Modification to 4.6.1 Dry heat (endurance) for sensing element

Replace 4.6.1.2 with:

"4.6.1.2 Dry heat (endurance) for sensor control unit and sensing element

The sensor control unit and the sensing element of the RLTHD shall be capable of withstanding long term exposure to high temperature as specified in 5.6.1.2."

2 Modification to 5.1.5.3 Multipoint heat detectors

Replace the second paragraph of 5.1.5.3 with:

"When testing the response time of multipoint detectors, one single sensors of the multipoint detector shall be placed in the centre of the tunnel measuring section (see Annex E). All other sensors shall be outside the heat tunnel and shall remain at ambient temperature (23 ± 5) °C during the measurement unless otherwise stated in the individual tests."

3 Modification to 5.1.7 Test schedule

In the first column, replace the 11th row, reading "Dry heat (endurance) sending element" with:

"Dry heat (endurance) sensor control unit and sensing element"

4 Modification to 5.5.2.2.3.1 Mounting of the sensing element

Replace the second and third Paragraph (after Note) with:

"When testing the response temperature of multipoint detectors, one single sensor within a 10 m section of sensing element L_{test} shall be placed in the tunnel measuring section as described in Annex E.

The position of the part of the sensing element under test (L_{test}) shall be chosen such that it represents the least sensitive response behaviour of the RLTHD. A typical example of a test setup is shown in Figure E.1."

5 Modification to 5.6.1.2 Dry heat (endurance) sensing element

Replace 5.6.1.2 with:

"5.6.1.2 Dry heat (endurance) for sensor control unit and sensing element

5.6.1.2.1 Object of the test

To demonstrate, if applicable, the ability of the RLTHD sensor control unit and sensing element to withstand long term ageing effects.

5.6.1.2.2 Principle

The test consists of exposure of the sensor control unit and the sensing element specimens to the high temperature, for a long period to accelerate ageing effects.

The test shall be conducted consecutively for the sensor control unit and the sensing element. However, in case the temperature conditioning for the sensor control unit and the sensing element is the same, testing may be conducted simultaneously.

5.6.1.2.3 Reference

The test apparatus and procedure shall be as described in EN 60068-2-2:2007.

5.6.1.2.4. State of the specimen during conditioning

The sensor control unit and the sensing element specimens shall not be supplied with power during conditioning and tests for non heat-dissipating specimens shall apply (Test B).

The length of sensing element used in the test shall correspond to the most unfavourable operating condition of the RLTHD technology under test. The configuration shall be the same as chosen in 5.1.5.

The length of sensing element to be exposed to the heat shall be the 10 m section L_{Test} which is to be used for the response test (see 5.1.5.).

The section of the sensing element to be exposed to the dry heat may be disconnected from the remainder of the sample and its open ends may be sealed in accordance with the manufacturer's instructions.

5.6.1.2.5 Conditioning

Conditioning shall be applied to the specimen as indicated in the Table 6 and Table 7.

Table 6 — Conditions for dry heat (endurance) test for sensing elements

Environmental group	**Class**	**Temperature** °C	**Duration** days
II	A1I, A2I, BI, A1N, A2N and BN	No test	
	class CI and CN	80 ± 2	21
	class DI and DN	95 ± 2	
	class EI and EN	110 ± 2	
	class FI and FN	125 ± 2	
	class GI and GN	140 ± 2	
III	A1I, A2I, BI, A1N, A2N and BN	70 ± 2	21
	class CI and CN	80 ± 2	21
	class DI and DN	95 ± 2	
	class EI and EN	110 ± 2	
	class FI and FN	125 ± 2	
	class GI and GN	140 ± 2	

Table 7 — Conditions for dry heat (endurance) test for sensor control unit

Environmental group	**Class**	**Temperature** °C	**Duration** days
I and II	all	No test	
III	all	70 ± 2	21

5.6.1.2.6 Final measurements

After the conditioning and a recovery period of at least 1 h, the functional test as described in 5.1.5 shall be conducted at a rate of rise of 3 Kmin-1 and the response time recorded.

The greater response time value measured in this test and that measured for the same specimen in the reproducibility test, shall be designated t(3)max and the lesser shall be designated t(3)min.

5.6.1.2.7 Requirements

No alarm or fault signal shall be given after powering the sensor control unit together with the sensing element at the end of the conditioning and recovery periods.

The ratio of the response times $t(3)_{max}$: $t(3)_{min}$ shall be not greater than 1,3."

Renumber all the following Tables and their cross references according to the addition of the new Table 7.

6 Modification to Table B.1 — Test fires for RLTHD

Replace Table B.1 with:

Test fire	Dimensions of steel tray mm	Fuel (by volume)	Amount of fuel kg
TF6F	500 × 500 × 50	Methylated spirit [90 % Ethanol – C2H5OH to which has been added 10 % denaturant impurity (Methanol)]	2
TF6	435 × 435 × 50	Methylated spirit [90 % Ethanol – C2H5OH to which has been added 10 % denaturant impurity (Methanol)]	2
TF6S	390 × 390 × 50	Methylated spirit [90 % Ethanol – C_2H_5OH to which has been added 10 % denaturant impurity (Methanol)]	2
NOTE TF6F (= fast) and TF6S (= slow) are fast and slow developing fires obtained by varying the size of the standard TF6 steel tray.			

7 Modification to Table B.2 — End of test condition

Replace Table B.2 with:

Test fire	End of test s
TF6F	300
TF6	300
TF6S	600

8 Modification to Table B.5 — Test validity criteria for test fire TF6S

Replace Table B.5 with:

Time from ignition t s	Min. temperature T_{min} °C	Max. temperature T_{max} °C
0	18	28
100	47	59
200	60	75
300	66	86
600	79	104

9 Modification to Annex E (normative), Mounting of the sensing element of multipoint RLTHD in the heat tunnel

Replace E.1 with:

"E.1 General

This annex specifies those properties of multipoint sensing element mounting arrangement which are of primary importance for making repeatable and reproducible measurements of response time and static response temperature (see 5.1.5.3 and 5.5.2.2.3)."

In E.2, replace the first and second paragraph, with:

"E.2 Mounting arrangement of multipoint sensing element

The multipoint sensing element shall be vertically placed in the working section of the heat tunnel. The amount of discrete temperature sensors placed in the heat tunnel working volume shall be 1

The multipoint sensing element to be tested shall be mounted vertically in the middle of the heat tunnel, such that the sensor is located in the working volume as defined in Annex F. A means shall be provided for creating a stream of air through the working volume at the constant temperatures and rates of rise of air temperature specified for the classes of detector to be tested. This air stream shall be essentially laminar and maintained at a constant mass flow, equivalent to (0,8 ± 0,1) ms-1 at 25 °C (see Figure E.1 and Figure E.2)."

10 Modification to Annex F (normative), Heat tunnel for response time and response temperature measurements

Replace the second paragraph of F.2 with:

The heat tunnel shall have a horizontal working section containing a working volume. The working volume is a defined part of the working section, where the air temperature and air flow conditions are within ± 2 K and ± 0,1 ms-1, respectively, of the nominal test conditions. Conformance with this requirement shall be regularly verified under both static and rate-of-rise conditions by measurements at an adequate number of points distributed within and on the imaginary boundaries of the working volume while the test apparatus is not installed. The cross section of the working volume perpendicular to the airflow shall be a minimum of 200 mm × 200 mm.