



SLOVENSKI STANDARD SIST EN 1364-6:2025

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Preskusi požarne odpornosti nenosilnih elementov - 6. del: Zapore v odprtem stanju

Fire resistance tests for non-loadbearing elements - Part 6: Open-state cavity barriers

Feuerwiderstandsprüfungen für nichttragende Bauteile - Teil 6: Hohlraum-Brandsperrern

Essais de résistance au feu des éléments non porteurs - Partie 6 : Dispositifs de recoupement de lame d'air

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ICS:

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
91.060.99	Drugi stavbni elementi	Other elements of buildings

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English Version

Fire resistance tests for non-loadbearing elements - Part 6: Open-state cavity barriers

Essais de résistance au feu des éléments non porteurs -
Partie 6 : Dispositifs de recouplement de lame d'air
ouverts en situation normale

Feuerwiderstandsprüfungen für nichttragende
Bauteile - Teil 6: Hohlraum-Brandsperrren

This European Standard was approved by CEN on 1 December 2024.

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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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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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EN 1364-6:2025 (E)

European foreword

This document (EN 1364-6:2025) has been prepared by Technical Committee CEN/TC 127 “Fire safety in buildings”, 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of an identical text or by endorsement, at the latest by August 2025 and conflicting national standards shall be withdrawn at the latest by August 2025.

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 has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

The test method is needed in support of ETAG 026-5 for cavity barriers.

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations 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.

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Introduction

Cavity barriers are provided within buildings to restrict the spread of smoke and fire in concealed spaces. Cavity barriers can be 'closed' e.g. in roof voids, under raised or hollow floors, between the inner and outer layers of walls such as in timber framed construction; or they can be 'open' e.g. as used in ventilated facade systems, roof eaves, rain screen cladding systems.

This document describes tests to measure the ability of a representative specimen of an open-state cavity barrier to resist the spread of fire from one side to another. A representative sample of a cavity barrier is exposed to a specified regime of heating and pressure. The performance of the test specimen is monitored on the basis of criteria in EN 1363-1. The fire resistance of the tested construction is expressed as the time for which the appropriate criteria have been satisfied.

The principles embodied in this method follow those embodied in EOTA TR31 the fire resistance test for closed cavity barriers published in 2008. However, TR31 is not applicable to open-state cavity barriers and consequently this method has had to be adapted to include these.

Testing of closed cavity barriers is not in the scope of this document. Test methods for closed cavity barriers are covered by EN 1366-4. Testing of large-scale closed cavity barriers are covered by EN 1364-1.

Reference scenario and limitations:

Closed cavity barriers whose function is to close a gap between fire resistant elements of building structure fall within the scope of the small room fire scenario where ISO 834-1 has been recognized as the reference fire resistance test.

For open-state cavity barriers e.g. those used in ventilated facades, rain screens and roof eaves; a European reference scenario has not yet been established. Work is on-going to develop a full-scale façade test and it is expected that this method will be correlated to that full-scale test. Consequently, for the time being results of tests to this document cannot be used to imply performance of an external facade system in which the open-state cavity barrier is included. The test results can be used as supplementary evidence of cavity barrier performance in façade systems already accepted by current local regulations. Further information is given in Annex A.

Caution:

The attention of all persons concerned with managing and carrying out this fire resistance test, is drawn to the fact that fire testing can be hazardous and that there is a possibility that toxic and/or harmful smoke and gases may be evolved during the test. Mechanical and operation hazards can also arise during the construction of the test elements or structures, their testing and disposal of test residues.

An assessment of all potential hazards and risks to health should be made and safety precautions should be identified and provided. Written safety instructions should be issued. Appropriate training should be given to relevant personnel. Laboratory personnel should ensure that they always follow written safety instructions.

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1 Scope

This test method specifies methods for determining the fire resistance of open-state cavity barriers and is intended to be used in conjunction with EN 1363-1.

This document is applicable to non-loadbearing vertically or horizontally oriented open-state cavity barriers, which are designed to close and provide fire separation in the event of fire.

Open-state cavity barriers in facades, where the fire exposure comes as a result of a breaking window and allowing a developed fire to come into contact with the façade, can be tested to the optional “flame” criteria.

This document is not applicable to cavity barriers containing penetration seals, which are covered by EN 1366-3.

This document is not applicable to closed cavity barriers, which are covered by EN 1366-4.

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 1363-1, *Fire resistance tests — Part 1: General requirements*

EN 13501-2, *Fire classification of construction products and building elements - Part 2: Classification using data from fire resistance and/or smoke control tests, excluding ventilation services*

EN ISO 13943, *Fire safety — Vocabulary (ISO 13943)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1363-1, EN ISO 13943 and the following 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/>

3.1

concealed space

space in a building where fire may develop or pass through that is not normally used or accessible by humans

3.2

closed cavity barrier

non-loadbearing vertically or horizontally oriented element designed to provide fire separation in a concealed space (cavity)

Note 1 to entry: Closed cavity barriers will prevent airflow and drainage of water in its quiescent state.

3.3

splice

connection or junction between or within the length of a linear gap seal where it is being used as a cavity barrier

3.4

open cavity barrier

non-loadbearing vertically or horizontally oriented element designed to ventilate and provide fire separation in a concealed space (cavity)

Note 1 to entry: Open-state cavity barriers allow ventilation and drainage in the passive state, but which either close in a fire, or are already fire resisting in the open state, thus providing fire separation in the cavity.

3.5

facade system

system used to protect the outside vertical envelope of a building against weather exposure and fire

3.6

open cavity barrier vent area

open part of the cavity barrier in the cavity barriers passive state

Note 1 to entry: Width of this area is expressed in mm (see Figure 1 X-B).

3.7

sustained flaming

continuous flaming for a period of time greater than 10 s

3.8

passive state

non-reactive state where the full free vent area is available for ventilation/drainage

3.9

activated state

post-fire exposure state where the free vent area is closed and the cavity barrier has readings for insulation that are within the maximum temperature limits

3.10

activation time

time from $t=0$ until the activated state has been reached

3.11

cavity barrier width

dimension B as illustrated in Figure 1

3.12

cavity width

dimension X as illustrated in Figure 1

3.13

cavity barrier length

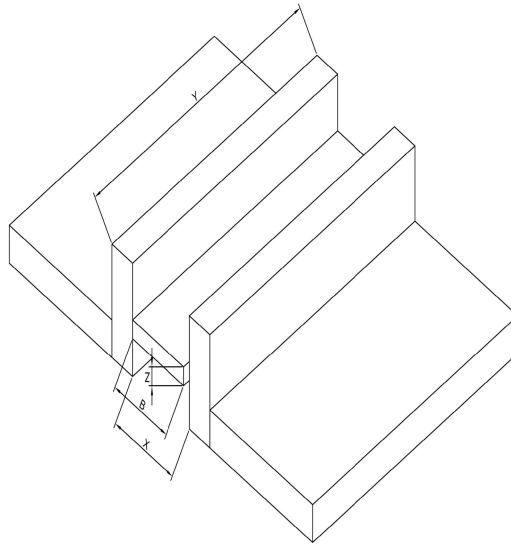
dimension Y as illustrated in Figure 1

3.14

cavity barrier height

dimension Z as illustrated in Figure 1

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**Key**

- B cavity barrier width
- X cavity width
- Y cavity barrier length
- Z cavity barrier height

Figure 1 — Dimensions of a cavity barrier

4 Test equipment

In addition to the test equipment specified in EN 1363-1, it is required that for open-state cavity barriers the internal dimensions of the test furnace shall be such that a distance of at least 200 mm exists between the long edge of the open-state cavity barrier and the wall of the furnace.

The size of the furnace required depends on the nominal width of the open-state cavity barrier and is given in Table 1 below. See also 6.2.

Table 1 — Minimum size of test furnace

Nominal width of open-state cavity barrier	Minimum size of furnace required
< 100 mm	1 m × 1 m × > 0,75 m deep
101 mm up to 300 mm	10 times nominal width of cavity barrier × > 0,75 m deep
> 300 mm	3 m × 3 m × > 0,75 m deep

See EN 1363-1, and if applicable EN 1363-2.

5 Test conditions

5.1 Heating conditions

The heating conditions and the furnace atmosphere shall conform to those given in EN 1363-1.