



# SLOVENSKI STANDARD

## SIST EN 13238:2010

01-junij-2010

Nadomešča:  
SIST EN 13238:2002

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### Preskusi odziva gradbenih proizvodov na ogenj - Postopki kondicioniranja in splošna pravila za izbiro podlag

Reaction to fire tests for building products - Conditioning procedures and general rules for selection of substrates

Prüfungen zum Brandverhalten von Bauprodukten - Konditionierungsverfahren und allgemeine Regeln für die Auswahl von Trägerplatten

Essais de réaction au feu des produits de construction - Mode opératoire du conditionnement et règles générales de sélection des substrats

Ta slovenski standard je istoveten z: **EN 13238:2010**

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#### **ICS:**

13.220.50	Požarna odpornost gradbenih materialov in elementov	Fire-resistance of building materials and elements
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EUROPEAN STANDARD

EN 13238

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2010

ICS 13.220.50

Supersedes EN 13238:2001

English Version

## Reaction to fire tests for building products - Conditioning procedures and general rules for selection of substrates

Essais de réaction au feu des produits de construction -  
Modes opératoires de conditionnement et règles générales  
de sélection des substrats

Prüfungen zum Brandverhalten von Bauprodukten -  
Konditionierungsverfahren und allgemeine Regeln für die  
Auswahl von Trägerplatten

This European Standard was approved by CEN on 18 December 2009.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Foreword

This document (EN 13238:2010) 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 2010, and conflicting national standards shall be withdrawn at the latest by August 2010.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13238:2001.

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 Directive(s).

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, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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## Introduction

The Construction Products Directive requires products to be tested in their end use condition which, for the purpose of substrates, could lead to an economically unrealistic large variety of tests to be carried out. This large spectrum has been reduced to a practical number of standard substrates that enables the majority of end use conditions to be represented. Rules for the selection of such substrates are given in this European Standard.

This European Standard is intended for use in conjunction with European Standards covering the reaction to fire test methods for the relevant construction products.

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## 1 Scope

This European Standard describes the conditioning procedures for test specimens which will be tested according to the European standards for reaction to fire.

The rules for the selection of substrates for construction products when carrying out reaction to fire tests are also detailed in this European Standard.

This European Standard does not contain requirements for

- the pre-drying of test specimens for the non-combustibility test according EN ISO 1182;
- methods of cleaning (e.g. washing) and other methods for the assessment of durability aspects, which are dealt with in the relevant product standards.

## 2 Normative references

The following referenced documents are indispensable for the application 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 312, *Particleboards — Specifications*

EN 520, *Gypsum plasterboards — Definitions, requirements and test methods*

EN 636, *Plywood — Specifications*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests* <https://standards.iteh.ai/catalog/standards/sist/18979805-71d1-434f-88f7-7c9ad60816d3/sist-en-13238-2010>

EN 13823, *Reaction to fire tests for building products — Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 14306, *Thermal insulation products for building equipment and industrial installations — Factory made calcium silicate (CS) products — Specification*

EN 14390, *Fire test — Large-scale room reference test for surface products*

EN ISO 1182, *Reaction to fire tests for building products — Non-combustibility test (ISO 1182:2002)*

EN ISO 1716, *Reaction to fire tests for building products — Determination of the heat of combustion (ISO 1716:2002)*

EN ISO 9239-1, *Reaction to fire tests for floorings — Part 1: Determination of the burning behaviour using a radiant heat source (ISO 9239-1:2002)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2002)*

EN ISO 13943:2000, *Fire safety — Vocabulary (ISO 13943:2000)*

ISO 390, *Products in fibre-reinforced cement — Sampling and inspection*

ISO 1887, *Textile glass — Determination of combustible-matter content*

**EN 13238:2010 (E)****3 Terms and definitions**

For the purposes of this document, the terms and definitions given in EN ISO 13943:2000 and the following apply.

**3.1****material**

single basic substance or uniformly dispersed mixture of substances, e.g. metal, stone, timber, concrete, mineral wool with uniformly dispersed binder or polymers

**3.2****product**

material, element or component about which information is required

**3.3****substrate**

product which is used immediately beneath the product about which information is required

NOTE For a flooring, it is the floor on which the flooring is mounted or the material which represents this floor.

**3.4****standard substrate**

product which is representative of the substrate used in end use applications

**3.5****test specimen**

piece of the product which is to be tested together with or without any substrate or treatment

NOTE The test specimen may include an air gap.

**3.6****conditioning**

exposure to a controlled atmosphere

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**4 Conditioning procedures****4.1 General**

Test specimens used by the laboratory to conduct tests according to EN ISO 1182, EN ISO 1716, EN ISO 9239-1, EN ISO 11925-2, EN 13823 and EN 14390 shall be conditioned at a temperature of  $(23 \pm 2) ^\circ\text{C}$  and a relative humidity of  $(50 \pm 5) \%$ .

NOTE This corresponds to the recommended atmosphere and normal tolerances given in ISO 554.

Test specimens shall be arranged within the conditioning environment in such a way that air can circulate around each individual test specimen.

Test specimens shall be conditioned either until constant mass is achieved (see 4.2) or for a fixed period (see 4.3).

**4.2 Conditioning to constant mass**

Before testing, the test specimens shall be conditioned in the atmosphere specified in 4.1 for a minimum period of 48 h, until constant mass is achieved.

Constant mass is considered to be achieved when two successive weighing operations, carried out at an



interval of 24 h, do not differ by more than 0,1 % of the mass of the specimen or 0,1 g, whichever is the greater.

A number of weighing devices may be necessary. At least one weighing device shall have an accuracy of at least 0,1 g.

### 4.3 Conditioning for a fixed period

Before starting conditioning for a fixed period, the test specimens shall be properly cured in accordance with manufacturer's instructions and shall not contain excess water. The content of excess water shall be measured and shall be below 40 % before the test specimens are placed in the conditioning environment.

Before testing the test specimens shall be conditioned in the atmosphere specified in 4.1 for the following minimum periods:

- a) Minimum conditioning period of eight weeks:
  - 1) fire retardant treated wood and fire retardant treated wood based products;
  - 2) cement based products;
- b) Minimum conditioning period of four weeks:
  - 1) not fire retardant treated wood and not fire retardant treated wood based products;
  - 2) calcium silicate products;
  - 3) gypsum and gypsum based products;
  - 4) all other products containing hygroscopic materials;
- c) Minimum conditioning period of two weeks: all other products.

## 5 General rules for selection of substrates

### 5.1 General

The substrates used by the laboratory to conduct tests according to EN ISO 9239-1, EN ISO 11925-2, EN 13823 and EN 14390, shall be evaluated when appropriate to determine their reaction to fire test performance and thus compliance with this standard. One indicative test shall be conducted on each batch of substrates.

### 5.2 Standard substrates for floorings

**5.2.1** Test results using a standard substrate complying with the requirements of 5.2.2 or 5.2.3 are applicable if the density of the end use substrate is at least 75 % of the nominal value of the density of that standard substrate.

**5.2.2** End use substrates of classes A1 and A2-s1,d0 are represented by fibre cement board (in accordance with ISO 390) with thickness  $(8 \pm 2)$  mm, with density  $(1\ 800 \pm 200)$  kg/m<sup>3</sup> and with classification A2<sub>f</sub>-s1, when – insofar as for the EN ISO 9239-1 test – the fibre cement board is tested as flooring but without a substrate.

**5.2.3** End use substrates of wood and of classes A1 and A2-s1,d0 are represented by not fire retardant treated particleboard (in accordance with EN 312) with thickness  $(20 \pm 2)$  mm, with density  $(680 \pm 50)$  kg/m<sup>3</sup> and with classification C<sub>f</sub>-s1 when tested (according to EN ISO 9239-1) as flooring but without a substrate.