



SLOVENSKI STANDARD

SIST EN 13238:2002

01-februar-2002

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

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Ta slovenski standard je istoveten z: **EN 13238:2001**

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

May 2001

ICS 13.220.50; 91.100.01

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 -
Mode opératoire du 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 7 April 2001.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

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Foreword

This European Standard 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 November 2001, and conflicting national standards shall be withdrawn at the latest by December 2003.

This European Standard 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the 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 CEN test methods covering reaction to fire tests for building products.

As agreed by the CEN co-ordination group for fire (CEN/BT WG50), no irreversible preconditioning treatments are covered in this European Standard. Such treatments are dealt with in the relevant product standards.

The conditioning times given in this standard are based on current knowledge at the time of drafting. Any information resulting from experience in using the standard will be taken into account in any future revision.

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1 Scope

This European Standard specifies the conditioning procedures for samples of building products, and the rules for the selection of substrates for floor coverings and wall/ceiling surface products, when carrying out reaction to fire tests.

This European Standard does not cover pre-drying procedures for prEN ISO 1182 or the washing and cleaning procedures relating to durability aspects, which are covered by product standards.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 312-2, *Particleboards - Specifications - Requirements for general purpose boards for use in dry conditions*

prEN 520, *Gypsum plasterboards - Definitions, requirements and test methods*

prEN ISO 1182, *Reaction to fire tests for building products - Non-combustibility test (ISO/DIS 1182:1998)*

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

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

EN ISO 13943, *Fire safety - Vocabulary (ISO 13943:1999)*

prEN ISO 9239-1, *Reaction to fire tests for floorcoverings - Part 1: Determination of the burning behaviour using a radiant heat source (ISO/DIS 9239-1:1998)*

3 Terms and definitions

For the purpose of this European Standard, the terms and definitions given in EN ISO 13943, together with the following, apply:

3.1

assembly

see EN ISO 13943

NOTE The assembly may include an air gap.

3.2

material

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

3.3

product

material, element or component about which information is required

3.4

substrate

product which is used immediately beneath the product about which information is required. For a flooring, it is the floor on which the flooring is mounted or the material to represent this floor

3.5

standard substrate

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

3.6

test specimen

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

3.7

conditioning

exposure to a controlled atmosphere

4 Conditioning procedures

4.1 General

Test specimens 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 time period (see 4.3).

WARNING The conditioning of some products may lead to accumulation of hazardous gases.

4.2 Conditioning to constant mass

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

Constant mass is considered to be reached when the difference between two successive weighing operations (Δm), carried out at an interval of n hours ($n \geq 24$) is not greater than or equal to $0,1n/24 \%$ of the previously recorded mass of the specimen, or $0,1n/24$ g, whichever is the greater in terms of mass, i.e. if $m(t)$ and $m(t + n)$ are the two successive measured masses, expressed in grams, and Δm is defined by $\Delta m = |m(t + n) - m(t)|$, then constant mass is considered to be reached if:

$$\Delta m \leq \frac{n}{24} \max(0,1; \frac{m(t)}{1000})$$

4.3 Conditioning for fixed period

a) Minimum conditioning of 2 months:

flame retardant (FR) treated wood and FR treated wood based products
cement based products.

b) Minimum conditioning 4 weeks:

non-flame retardant treated wood and non-flame retardant treated wood based products
calcium silicate products
gypsum and gypsum based products.

c) Minimum conditioning of 2 weeks for all other products.

5 General rules for selection of substrates

5.1 Standard substrates for floorings

5.1.1 Test results using a standard substrate complying with the requirements of 5.1.2 or 5.1.3 are applicable if the density of the end use substrate is at least 0,75 x the density of this standard substrate.

5.1.2 Floors and end use substrates of Euroclasses A1_{fl} and A2_{fl} are represented by fibre cement board (ISO 390), with thickness (6 ± 1) mm and density $(1\ 800 \pm 200)$ kg/m³.

5.1.3 Floors and end use substrates of wood or Euroclasses A1_{fl} and A2_{fl} are represented by

- particle board in accordance with EN 312-2, non-FR, for internal use
- thickness (20 ± 2) mm
- density (680 ± 50) kg/m³
- flame spread : CHF value of $(4,5 \pm 1,0)$ kW/m² in accordance with prEN ISO 9239-1.

5.1.4 For end use substrates which are not Euroclass A1_{fl}, A2_{fl} or wooden, the product shall be tested under end use conditions.

5.1.5 The method of attachment (e.g. adhesive) of floorings shall be representative of end-use practice.

The method of attachment in end-use practice shall be reproduced in the preparation of the specimen for test i.e. end-use adhesive and end-use quantities etc. If the order in which the attachments are conducted is known, this shall also be reproduced in the test specimen e.g. if the adhesive is applied to the substrate and not to the flooring in practice, then it shall be applied to the substrate during test specimen preparation. The same or greater time for curing and drying as used in end-use practice shall also be allowed.

If in practice different types of adhesive are used, either specimens with each of the different adhesives shall be prepared, or specimens prepared without adhesive.

5.2 Standard substrates for wall and ceiling surface products

A list of standard substrates is given in table 1.

The choice of the substrate for the test shall be made in view of the field of application of test results, taking into account the end-use substrate and the following rules which apply as a whole:

a) Standard substrates represent end-use substrates which have a density equal to or greater than the nominal value of the density of the standard substrate.

This rule applies to all substrates of Euroclasses A1 and A2 at least 6 mm thick and it also applies to substrates of Euroclasses B, C, D and E at least 12 mm thick.

b) Standard substrates of Euroclasses A1 and A2 represent end-use substrates of Euroclasses A1 or A2 only.