SLOVENSKI STANDARD
SIST EN 634-2:1998

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S cementom vezane iverne plošče - Specifikacije - 2. del: Zahteve za iverne plošče, vezane z OPC, za uporabo v suhih, vlažnih in zunanjih razmerah

Cement-bonded particleboards - Specifications - Part 2: Requirements for OPC bonded particleboards for use in dry, humid and exterior conditions

Zementgebundene Spanplatten - Anforderungen - Teil 2: Anforderungen an Portland Zement PZ gebundene Spanplatten zur Verwendung im Trocken-, Feucht- und Außenbereich

Panneaux de particules liées au ciment - Exigences - Partie 2: Exigences pour les panneaux de particules liées au ciment Portland ordinaire utilisés en milieu sec, humide et extérieur

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English version

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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1 Scope

This European Standard for cement-bonded particleboards specifies the requirements for particleboards bonded with Ordinary Portland Cement (OPC) for use in dry, humid[1]) and exterior[2]) conditions. Additional information on supplementary properties for certain applications is also given.

NOTE: Cement-bonded particleboard does not contain any asbestos fibre.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the 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.

EN 310
Wood-based panels – Determination of modulus of elasticity in bending and bending strength

EN 317
Particleboards and fibreboards – Determination of swelling in thickness after immersion in water

EN 318
Fibreboards – Determination of dimensional changes associated with changes in relative humidity

EN 319
Particleboards and fibreboards – Determination of tensile strength perpendicular to the plane of the board

EN 320
Fibreboards – Determination of resistance to axial withdrawal of screws

EN 321
Fibreboards – Cyclic tests in humid conditions

EN 323
Wood-based panels – Determination of density

EN 326-1
Wood-based panels – Sampling, cutting and inspection – Part 1: Sampling and cutting of test pieces and expression of test results

EN 634-1:1995
Cement-bonded particleboards – Specifications – Part 1: General requirements

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[1]) Humid conditions are defined in terms of service class 2 of ENV 1995-1-1 which is characterized by a moisture content in the material corresponding to a temperature of 20 °C and a relative humidity of the surrounding air exceeding 85 % only for a few weeks per year. Boards of this type are suitable for use in biological hazard classes 1 and 2 of EN 335-3.

[2]) Exterior conditions are defined in terms of service class 3 of ENV 1995-1-1. Boards of this type are suitable for use in biological hazard classes 1, 2, 3 and 4 of EN 335-3.

EN 789
Timber structures – Test methods – Determination of mechanical properties of wood-based panels

EN 1058
Wood-based panels – Determination of characteristic values of mechanical properties and density

EN 1128
Cement-bonded particleboards – Determination of hard body impact resistance

prEN 1156
Wood-based panels – Determination of duration of load and creep factors

prEN 1328
Cement-bonded particleboards –Determination of frost resistance

3 Requirements

3.1 General

OPC bonded particleboards shall comply with the general requirements as listed in EN 634-1 together with the requirements set out in Table 1 of this standard.

The requirements in Table 1 shall be met by 5 percentile values (95 percentile values in the case of thickness swelling) based on the mean values for individual boards and calculated in accordance with EN 326-1. In the case of thickness swelling they shall be equal to or less than the values in Table 1 and in the case of all other properties they shall be equal to or greater than the values in Table 1.

3.2 Specified properties

Table 1: Requirements for specified properties

Property	Test method	Unit	Requirement (all thicknesses)
Density	EN 323	kg/m³	1 000
Bending strength	EN 310	N/mm²	9
Modulus of elasticity in bending	EN 310	N/mm²	Class 1 4 500 Class 2 4 000
Internal bond	EN 319	N/mm²	0,5
Swelling in thickness, 24 h	EN 317	%	1,5
Internal bond after cyclic test	EN 319 and EN 321	N/mm²	0,3
Swelling in thickness after cyclic test	EN 317 and EN 321	%	1,5

NOTE 1: The values in Table 1 for both bending strength and modulus of elasticity shall apply to test results obtained in any direction in the plane of the panel.

NOTE 2: With the exception of thickness swelling and the cyclic test, the values given in Table 1 are characterised by a moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C.

NOTE 3: If it is made known by the purchaser that the boards are intended for specific use in flooring, walls or roofing the relevant performance standard has also to be consulted. This can result in additional requirements having to be complied with.

3.3 Supplementary properties

For certain applications, information on some of the properties listed in Table 2 can be required. On request, this information shall be supplied by the board manufacturer, and in this case shall have been derived using the test methods listed in Table 2.

Table 2: Supplementary properties and test methods

Property	Test method
Dimensional changes	EN 318
Impact resistance	EN 1128
Resistance to withdrawal of screws	EN 320
Frost resistance	prEN 1328
Creep and duration of load	prEN 1156
Structural properties	EN 789 and EN 1058
NOTE: For certain applications, information on additional properties not specified in Table 2 can be required. For example for the determination of thermal conductivity and water vapour transmission, work is in progress in CEN/TC 89. Until this work is completed, users should refer to national publications. These publications should also be consulted for information on the fire behaviour of cement bonded particleboards.	

4 Verification of compliance

4.1 General

Verification of compliance with this standard shall be carried out using the test methods listed in Table 1 and in EN 634-1:1995.

4.2 External control

External control in the factory, if any, shall be carried out according to a statistical basis[3]).

Inspection of consignments shall be carried out according to a statistical basis[3]).

4.3 Internal control

Internal control shall be carried out according to a statistical basis[3]).

The properties listed in Table 3 shall be controlled using intervals between tests not exceeding the intervals given. Sampling shall be carried out at random. Alternative test methods and/or unconditioned test pieces may be used if a valid correlation can be proven (see prEN 326-2[3])) with the specified test method. The intervals between tests given in Table 3 are related to a production under statistical control.

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[3]) It is intended to apply EN 326-2 and EN 326-3 as a statistical basis when implemented.

Table 3: Maximum intervals between tests for each production line

Property	Maximum interval between tests
General Properties: Thickness (unsanded) Thickness (sanded) Length Width Squareness Edge straightness Moisture content	 8 h per thickness 2 h per thickness 2 h per thickness 2 h per thickness 2 h per thickness 2 h per thickness 8 h per thickness
Density Bending strength Modulus of elasticity (bending)	8 h per thickness range*)
Internal bond Swelling in thickness, 24 h	24 h
Internal bond after cyclic test Swelling in thickness after cyclic test	one week

*) A thickness range is defined as any range of thicknesses extending to ± 6 mm from the preceding manufactured thickness.

5 Marking

Each panel shall be clearly marked by the manufacturer by indelible direct printing with at least the following information in this sequence:

a) the manufacturer's name, trade mark, or identification mark;

b) the number of this European Standard, EN 634-2;

c) the nominal thickness in millimetres;

d) the modulus of elasticity class;

e) the quality mark, if any;

f) the batch number, or the production week and year.

NOTE 1: In case of cut-size panels, where the first purchaser is the user of the product and where he agrees that marking (other than on the package) is unnecessary, the marking of such individual panels in the package need not be undertaken.

Additionally, panels may be colour coded by the vertical application near one corner of two white stripes and one brown stripe each 25 mm in width.

NOTE 2: This is in accordance with the unified system of colour coding for wood-based panels and indicates that the board is suitable for use in dry, humid and exterior conditions.