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Particleboards - Specifications - Part 6: Requirements for heavy duty load-bearing boards for use in dry conditions

Spanplatten - Anforderungen - Teil 6: Anforderungen an hochbelastbare Platten für tragende Zwecke zur Verwendung im Trockenbereich

Panneaux de particules - Exigences - Partie 6: Exigences pour panneaux travaillant sous contrainte élevée utilisés en milieu sec

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EUROPEAN STANDARD

EN 312-6

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1996

ICS 79.060.20

Descriptors: wooden boards, particle boards, characteristics, specifications, environments, conformity tests, marking

English version

**Particleboards - Specifications - Part 6:
Requirements for heavy duty load-bearing boards
for use in dry conditions**

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EN 312-6:1996
EUROPEAN STANDARD
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Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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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 112 "Wood-based panels", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by February 1997, and conflicting national standards shall be withdrawn at the latest by June 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

This Standard is one of a series of standards specifying requirements for particleboards. The other parts of this series are listed in clause 2 and annex A.

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1 Scope

This European Standard specifies the requirements for heavy duty load-bearing boards for use in dry conditions¹).

NOTE: These boards have enhanced properties with those specified in EN 312-4. They may also be used in design and construction of load-bearing or stiffening building elements, e. g. walls, flooring, roofing and I-beams (see EN V 1995-1-1 and/or performance standards).

The values listed in this standard relate to product properties but they are not characteristic values to be used in design calculations²).

Additional information on supplementary properties for certain applications is also given.

Particleboards in accordance with this standard may be referred to as P6-boards.

This standard does not give requirements for Oriented Strand Boards (OSB); these are set out in EN 300.

This standard does not apply to extruded particleboards.

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 300

Oriented Strand Boards (OSB) – Definitions, classification and specifications

EN 310

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

EN 311

Particleboards – Surface soundness of particleboards – Test method

EN 312-1

Particleboards – Specifications – Part 1: General requirements for all board types

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 323

Wood-based panels – Determination of density

¹) Dry conditions are defined in terms of service class 1 of EN V 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 only exceeding 65 % for a few weeks per year. Boards of this type are only suitable for use in biological hazard class 1 of EN 335-3.

²) Such characteristic values (e. g. for use in design calculation in EN V 1995-1-1 are given either in EN (112.406) or derived by testing according to EN 789, EN 1058 and EN 1156.

EN 326-1

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

3 Requirements

3.1 General

Particleboards shall comply with the general requirements as listed in of EN 312-1, 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.

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.

3.2 Mechanical and swelling properties

Table 1: Requirements for specified mechanical and swelling properties

Property	Test method	Unit	Requirement					
			Thickness Range (mm, nominal)					
			6 to 13	> 13 to 20	> 20 to 25	> 25 to 32	> 32 to 40	> 40
Bending strength	EN 310	N/mm ²	18	16	15	14	12	
Modulus of elasticity in bending	EN 310	N/mm ²	3 150	3 000	2 550	2 400	2 050	
Internal bond	EN 319	N/mm ²	0,60	0,50	0,40	0,35	0,30	0,25
Swelling in thickness, 24 h	EN 317	%	15	14	14	14	13	13

NOTE: The values for bending properties and internal bond are characterised by a moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C.

The values for swelling in thickness are characterised by a moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C before treatment.

NOTE: 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 might 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
Density	EN 323
Dimensional changes	EN 318
Surface soundness	EN 311

NOTE: For certain applications, information on additional properties not specified in table 2 can be required. For instance, for the determination of thermal conductivity and of water vapour transmission properties work is in progress in CEN/TC 89. Until this work is completed, users should refer to national publications. These should also be consulted for information on the fire behaviour of particleboards.

4 Verification of compliance

4.1 General

Verification of compliance with this EN shall be carried out using the test methods listed in table 1 and in EN 312-1.

4.2 External control

External control of the factory, if any, shall be carried out according to a statistical basis³⁾.

Inspection of consignments shall be carried out according to a statistical basis³⁾.

4.3 Internal control

Internal control shall be carried out according to a statistical basis³⁾.

The properties listed in table 1 and in EN 312-1, shall be controlled using intervals between tests not exceeding the intervals given in table 3. Sampling shall be carried out at random. Alternative test methods and/or unconditioned test pieces may be used if a valid correlation to the specified test methods can be proven (see EN 326-2³⁾). The intervals between tests given in table 3 are related to a production under statistical control.

Table 3: Maximum intervals between tests for each production line

Property	Maximum interval between tests
General properties	see EN 312-1
All other properties listed in table 1	8 h*)
*) If several thickness ranges are produced in one 8 h shift, the internal control shall be organized so that at least one board of each thickness range is tested in one week's production.	

³⁾ It is intended to apply prEN 326-2 and prEN 326-3 as a statistical basis when implemented

5 Marking

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

- a) the manufacturer's name, trade mark, or identification mark;
- b) the number of this EN 312-6;
- c) the nominal thickness;
- d) the formaldehyde class;
- e) the batch number, or the production week and year.

NOTE: 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 a series of colour stripes each 25 mm in width; the colours shall comply with the colour coding system given in EN 312-1.

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