SLOVENSKI STANDARD
SIST EN 622-5:2010

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Vlaknene plošče - Specifikacije - 5. del: Zahteve za plošče, izdelane po suhem postopku (MDF)

Fibreboards - Specifications - Part 5: Requirements for dry process boards (MDF)

Faserplatten - Anforderungen - Teil 5: Anforderungen an Platten nach dem Trockenverfahren (MDF)

Panneaux de fibres - Exigences - Partie 5: Exigences pour panneaux obtenus par procédé à sec (MDF)

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Fibreboards - Specifications - Part 5: Requirements for dry process boards (MDF)

Panneaux de fibres - Exigences - Partie 5 : Exigences pour panneaux obtenus par procédé à sec (MDF)

Faserplatten - Anforderungen - Teil 5: Anforderungen an Platten nach dem Trockenverfahren (MDF)

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Foreword

This document (EN 622-5:2009) 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of an identical text or by endorsement, at the latest by May 2010, and conflicting national standards shall be withdrawn at the latest by May 2010.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 622-5:2006.

This standard is one of a series specifying requirements for fibreboards. The other parts of this series are listed in Clause 2 and in the bibliography.

Compared to EN 622-5:2006 the following modifications have been made:

a) Panel type MDF.RWH also intended for instantaneous or short-term load duration as a rigid underlay in roofing and walls;

b) Requirement for swelling in thickness after cyclic testing changed for panel type MDF.RWH in Table 11.

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, 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 the United Kingdom.

1 Scope

This European Standard specifies the requirements for dry process boards (MDF) as defined in EN 316.

The values listed in this European Standard relate to product properties but they are not characteristic values to be used in design calculations[1)].

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 310, *Wood-based panels — Determination of modulus of elasticity in bending and of bending strength*

EN 311, *Wood-based panels — Surface soundness — Test method*

EN 317, *Particleboards and fibreboards — Determination of swelling in thickness after immersion in water*

EN 318, *Wood based panels — 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, *Wood-based panels — Determination of moisture resistance under cyclic test conditions*

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

EN 326-2, *Wood-based panels — Sampling, cutting and inspection — Part 2: Quality control in the factory*

EN 326-3, *Wood-based panels — Sampling, cutting and inspection — Part 3: Inspection of an isolated lot of panels*

EN 382-1, *Fibreboards — Determination of surface absorption — Part 1: Test method for dry process fibreboards*

EN 622-1, *Fibreboards — Specifications — Part 1: General requirements*

EN 1087-1:1995, *Particleboards — Determination of moisture resistance — Part 1: Boil test*

EN 12871, *Wood-based panels — Performance specifications and requirements for load bearing boards for use in floors, walls and roofs*

EN 13271, *Timber fasteners — Characteristic load-carrying capacities and slip-moduli for connector joints*

EN 13446, *Wood-based panels — Determination of withdrawal capacity of fasteners*

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1) Such characteristic values (e.g. for use in design calculation in EN 1995-1-1) are either given in EN 12369-1 or derived by testing according to EN 789, EN 1058 and ENV 1156.

EN 13986:2004, *Wood-based panels for use in construction — Characteristics, evaluation of conformity and marking*

ISO 3340, *Fibre building boards — Determination of sand content*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13986:2004 and the following apply.

3.1
dry conditions
conditions corresponding to service class 1 of EN 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

NOTE Boards of this type are suitable for use only in hazard class 1 of EN 335-3.

3.2
humid conditions
conditions corresponding to service class 2 of EN 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 85 % for a few weeks per year

NOTE Boards of this type are suitable for use in hazard classes 1 and 2 of EN 335-3.

3.3
general purpose use
use in non load-bearing applications not otherwise specified

3.4
non load-bearing use
use in non load-bearing conditions, e.g. as part of a building or construction

3.5
load-bearing use
structural use
use in a load-bearing construction, i.e. an organized assembly of connected parts designed to provide mechanical resistance and stability to the works

3.6
load duration class
class characterized by the effect of a constant load acting for a certain period of time in the life of the structure

NOTE 1 The load duration classes are defined in EN 1995-1-1, see Table 1.

Table 1 — Load duration category

Load duration class	Order of accumulated duration of characteristic load
Permanent	More than ten years
Long-term	six months to ten years
Medium-term	one week to six months
Short-term	Less than one week
Instantaneous	

NOTE 2 Examples of load-duration assignment are given in Table 2. Since climatic loads (snow, wind) vary between countries, the assignment of load-duration classes may be specified in the national annex.

Table 2 — Examples of load-duration assignment

Load duration class	Examples of loading
Permanent	Self weight
Long-term	Storage
Medium-term	Imposed floor load, snow
Short-term	Snow, wind
Instantaneous	Wind, accidental load

4 Requirements

4.1 General

Dry process boards shall comply with the general requirements of EN 622-1 together with the relevant requirements set out in 4.2, 4.3, 4.4, 4.5 and 4.6 of this European Standard. Some supplementary properties and their appropriate test methods are given in Clause 6.

The requirements in Tables 3 to 11 shall be met by 5 percentile values (95 percentile values in the case of swelling in thickness), based on the mean test values for individual panels and calculated in accordance with EN 326-1. In the case of swelling in thickness, they shall be equal to or less than the values in the tables, and in the case of all other properties, they shall be equal to or greater than the values in Tables 3 to 11.

The values in Tables 3 to 11 for both bending strength and modulus of elasticity shall apply to test results obtained in the weakest direction in the plane of the panel.

Properties not required for specific thickness ranges are marked "—".

With the exception of swelling in thickness and internal bond after boil test (see Tables 4, 6, 8 and 11), the values given in the tables are characterised by a moisture content in the material corresponding to a temperature of 20 °C and a relative humidity of 65 %. The values given for swelling in thickness and internal bond after boil test are characterised by a moisture content in the material corresponding to a temperature of 20 °C and a relative humidity of 65 % before the treatment (immersion in water or boil treatment).

The moisture resistance of dry process boards for use in humid conditions (see Tables 4, 6, 8 and 11) is assessed by showing compliance with either one of two options:

— Option 1: Swelling in thickness and internal bond after cyclic test (according to EN 321);

— Option 2: Internal bond after immersion in boiling water (according to EN 1087-1:1995), with the modified procedure given in Annex A.

When verifying compliance by external control, only the test option performed and notified by the manufacturer shall be carried out. If the option is unknown, it will be necessary to carry out both sets of procedures, even though compliance with only one set of specifications is required.

4.2 Requirements for non load-bearing boards, including boards for general purpose use

4.2.1 Requirements for boards for use in dry conditions

Table 3 specifies the requirements for general purpose boards for use in dry conditions, particularly interior fitments including furniture.

Table 3 — Requirements for general purpose boards for use in dry conditions (type MDF)

Property	Test method	Unit	Ranges of nominal thickness mm								
			1,8 to 2,5	> 2,5 to 4	> 4 to 6	> 6 to 9	> 9 to 12	> 12 to 19	> 19 to 30	> 30 to 45	> 45
Swelling in thickness 24 h	EN 317	%	45	35	30	17	15	12	10	8	6
Internal bond	EN 319	N/mm^2	0,65	0,65	0,65	0,65	0,60	0,55	0,55	0,50	0,50
Bending strength	EN 310	N/mm^2	23	23	23	23	22	20	18	17	15
Modulus of elasticity in bending	EN 310	N/mm^2	—	—	2 700	2 700	2 500	2 200	2 100	1 900	1 700

4.2.2 Requirements for boards for use in humid conditions

Table 4 specifies the requirements for general purpose boards for use in humid conditions.

Table 4 — Requirements for general purpose boards for use in humid conditions (type MDF.H)

Property	Test method	Unit	Ranges of nominal thickness mm								
			1,8 to 2,5	> 2,5 to 4	> 4 to 6	> 6 to 9	> 9 to 12	> 12 to 19	> 19 to 30	> 30 to 45	> 45
Swelling in thickness 24 h	EN 317	%	35	30	18	12	10	8	7	7	6
Internal bond	EN 319	N/mm^2	0,70	0,70	0,70	0,80	0,80	0,75	0,75	0,70	0,60
Bending strength	EN 310	N/mm^2	27	27	27	27	26	24	22	17	15
Modulus of elasticity in bending	EN 310	N/mm2	2 700	2 700	2 700	2 700	2 500	2 400	2 300	2 200	2 000
Option 1 Swelling in thickness after cyclic testing	EN 317 EN 321	%	50	40	25	19	16	15	15	15	15
Internal bond after cyclic testing	EN 319 EN 321	N/mm^2	0,35	0,35	0,35	0,30	0,25	0,20	0,15	0,10	0,10
Option 2 Internal bond after boil test [a]	EN 319 EN 1087-1	N/mm^2	0,20	0,20	0,20	0,15	0,15	0,12	0,12	0,10	0,10

[a] EN 1087-1 applies with the modified procedure given in Annex A.