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French standard

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Wood-based panels

Flaxboards

Specifications

F : Panneaux à base de bois — Panneaux de lin — Spécifications

D : Holzwerkstoffe — Flachspanplatten — Anforderungen

French standard approved

by decision of the Director General of AFNOR on April 20, 2007 taking effect on May 20, 2007.

Correspondence

The European standard EN 15197:2007 has the status of French standard.

Analysis

This document is part of a set of standards drafted by CEN/TC 112 "Wood-based panels". Its objective is to define the requirements for flaxboards for general purposes, non-load bearing applications and interior fitments in dry conditions or in humid conditions.

Descriptors

Technical International Thesaurus: wood-based panels, particle boards, flax, environments, appointments, classifications, characteristics, reference to standards, marking.

Modifications

Corrections

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National foreword*References to French standards*

The correspondence between the standards figuring in the clause "Normative references" and the identical French standards is as follows:

<i>EN 120</i>	<i>: NF EN 120 (classification index: B 51-271)</i>
<i>EN 310</i>	<i>: NF EN 310 (classification index: B 51-124)</i>
<i>EN 311</i>	<i>: NF EN 311 (classification index: B 51-265)</i>
<i>EN 317</i>	<i>: NF EN 317 (classification index: B 51-249)</i>
<i>EN 318</i>	<i>: NF EN 318 (classification index: B 51-141)</i>
<i>EN 319</i>	<i>: NF EN 319 (classification index: B 51-250)</i>
<i>EN 322</i>	<i>: NF EN 322 (classification index: B 51-121)</i>
<i>EN 323</i>	<i>: NF EN 323 (classification index: B 51-122)</i>
<i>EN 324-1</i>	<i>: NF EN 324-1 (classification index: B 51-240-1)</i>
<i>EN 324-2</i>	<i>: NF EN 324-2 (classification index: B 51-240-2)</i>
<i>EN 326-1</i>	<i>: NF EN 326-1 (classification index: B 51-190-1)</i>
<i>EN 326-2</i>	<i>: NF EN 326-2 (classification index: B 51-190-2)</i>
<i>EN 326-3</i>	<i>: NF EN 326-3 (classification index: B 51-190-3)</i>
<i>EN 717-1</i>	<i>: NF EN 717-1 (classification index: B 51-272-1)</i>
<i>EN 1087-1</i>	<i>: NF EN 1087-1 (classification index: B 51-251-1)</i>
<i>EN 13986</i>	<i>: NF EN 13986 (classification index: B 54-250)</i>

The other standards mentioned in the clause "Normative references" that do not have any correspondence in the collection of French standards are as follows (they may be obtained from AFNOR):

ISO 3340



English Version

Wood-based panels - Flaxboards - Specifications

Panneaux à base de bois - Panneaux de lin - Spécifications

Holzwerkstoffe - Flachsspanplatten - Anforderungen

This European Standard was approved by CEN on 13 January 2007.

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.

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Foreword

This document (EN 15197:2007) 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 August 2007, and conflicting national standards shall be withdrawn at the latest by August 2007.

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 United Kingdom.



1 Scope

This European Standard specifies the requirements for flaxboards for general purposes, non-load bearing applications and interior fitments in dry conditions and for flaxboards for non-load bearing applications for use in humid conditions.

NOTE 1 Dry conditions are defined in terms of service class 1 of EN 1995-1-1 which is characterized by the 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. Humid conditions are defined in terms of service class 2 of EN 1995-1-1, which is characterised 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 2 This standard will be referred to in EN 13986, as far as construction applications are concerned.

NOTE 3 Boards in accordance with this standard may be referred to as FB1, FB2, FB3 or FB4 boards.

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

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 120, *Wood based panels — Determination of formaldehyde content — Extraction method called the perforator method*

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 322, *Wood-based panels — Determination of moisture content*

EN 323, *Wood-based panels — Determination of density*

EN 324-1, *Wood-based panels — Determination of dimensions of boards — Part 1: Determination of thickness, width and length*

EN 324-2, *Wood-based panels — Determination of dimensions of boards — Part 2: Determination of squareness and edge straightness*

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 717-1, *Wood-based panels — Determination of formaldehyde release — Part 1: Formaldehyde emission by the chamber method*

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

EN 13986, *Wood-based panels — 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 following term and definition applies.

3.1

flaxboard

particleboard as defined in EN 309 manufactured under pressure and heat from flax shives, with the addition of an adhesive which contains at least 70 % flax and which can also contain other raw materials such as particles of wood (wood flakes, chips, shavings, saw dust and similar materials)

4 Classification

Type FB1

General purpose flaxboard for use in dry conditions (usually for filling purposes).

Type FB2

Non-load bearing flaxboard for use in dry conditions (usually for further processing, such as veneering).

Type FB3

Flaxboard for interior fitment (including furniture) for use in dry conditions.

Type FB4

Non-load bearing flaxboard for use in humid conditions.



5 General requirements

Flaxboards shall comply with the general requirements listed in Table 1, when dispatched from the production.

Table 1 — General requirements at dispatch

No	Property	Test method	Requirement
1 ^a	Tolerances on nominal dimensions — Thickness (sanded) within and between boards — Thickness (unsanded) within and between boards — Length and width	EN 324-1	$\pm 0,3$ mm $- 0,3$ mm $+ 1,7$ mm ± 5 mm
2 ^a	Edge straightness tolerance	EN 324-2	1,5 mm/m
3 ^a	Squareness tolerance	EN 324-2	2 mm/m
4 ^a	Moisture content	EN 322	5 % to 13 %
5 ^a	Tolerance on the mean density within a board	EN 322	± 10 %
6 ^b	Formaldehyde Class E 1 Perforator value	EN 120	Content ≤ 8 mg/100 g oven dry board ^d
	Steady state emission value ^c	EN 717-1	Release $\leq 0,124$ mg/m ³ air
^a These values are characterized by a moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C. ^b The perforator values apply to boards with moisture contents H of 6,5 %. In the case of particleboards with different moisture content (in the range of 3 % $\leq$ H $\leq$ 10 %) the perforator value shall be multiplied by a factor F which can be calculated from the following equation: $F = - 0,133 H + 1,86$ ^c Required for initial type testing other than for established products where initial type testing may also be carried out on the basis of existing data with EN 120 or EN 717-1 testing, either from factory production control or from external inspection. ^d Experience has shown that to ensure compliance with these limits, the rolling average of the values of EN 120 found from the internal factory production control over a period of ½ year should not exceed 6,5 mg HCHO/100 g panel mass.			

6 Requirements for general purpose flaxboard for use in dry conditions (Type FB1)

Boards of this type shall comply with the requirements given in Table 2. These requirements shall be met by five percentile values based on the mean values for individual boards and calculated in accordance with EN 326-1. These five percentile values shall be equal to or greater than the values in Table 2.

Table 2 — General purpose flaxboards for use in dry conditions (Type FB1) — Requirements for specified mechanical properties

Property	Test method	Unit	Requirement				
			Thickness range (mm, nominal)				
			< 20	20 to 25	> 25 to 32	> 32 to 40	> 40
Bending strength	EN 310	N/mm ²	6,0	5,5	4,5	4,0	3,5
Internal bond	EN 319	N/mm ²	0,13	0,11	0,10	0,08	0,05

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

7 Requirements for non-load bearing flaxboard for use in dry conditions (Type FB2)

Boards of this type shall comply with the requirements given in Table 3. These requirements shall be met by five percentile values based on the mean values for individual boards and calculated in accordance with EN 326-1. These five percentile values shall be equal to or greater than the values in Table 3.

Table 3 — Non load bearing flaxboards for use in dry conditions (Type FB2) – Requirements for specified mechanical properties

Property	Test method	Unit	Requirement					
			Thickness range (mm, nominal)					
			< 13	13 to 20	>20 to 25	>25 to 32	>32 to 40	>40
Bending strength	EN 310	N/mm ²	9,0	8,0	7,0	6,5	6,0	5,0
Modulus of elasticity	EN 310	N/mm ²	1 500	1 350	1 200	1 050	1 000	950
Internal bond	EN 319	N/mm ²	0,23	0,20	0,18	0,15	0,13	0,10

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



8 Requirements for flaxboard for interior fitments (including furniture) for use in dry conditions (Type FB3)

Boards of this type shall comply with the requirements given in Table 4. These requirements shall be met by five percentile values based on the mean values for individual boards and calculated in accordance with EN 326-1. These five percentile values shall be equal to or greater than the values in Table 4.

Table 4 — Flaxboards for interior fitments for use in dry conditions (Type FB3) — Requirements for specified mechanical properties

Property	Test method	Unit	Requirement					
			Thickness range (mm, nominal)					
			> 13 to 20	> 20 to 25	> 25 to 32	> 32 to 40	> 40 to 50	> 50
Bending strength	EN 310	N/mm ²	11,5	10,5	9,0	8,5	7,0	6,5
Modulus of elasticity in bending	EN 310	N/mm ²	1 600	1 500	1 350	1 200	1 050	950
Internal bond	EN 319	N/mm ²	0,30	0,25	0,22	0,18	0,18	0,15
Surface soundness	EN 311	N/mm ²	0,7	0,7	0,7	0,7	0,7	0,7
NOTE The values are characterised by moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C.								

9 Requirements for non-load bearing flaxboard for use in humid conditions (Type FB4)

Boards of this type shall comply with the requirements given in Table 5. These requirements shall be met by 5 percentile values based on the mean values for individual boards and calculated in accordance with EN 326-1. These 5 percentile values shall be equal to or greater than the values in Table 5. In case of thickness swelling they shall be equal or less than the values in Table 5.

Table 5 — Non load-bearing flaxboards for use in humid conditions (Type FB4) — Requirements for specified mechanical and physical properties

Property	Test method	Unit	Requirement					
			Thickness range (mm, nominal)					
			>13 to 20	>20 to 25	>25 to 32	>32 to 40	>40 to 50	> 50
Bending strength	EN 310	N/mm ²	9,5	8,5	7,5	7,0	6,5	5,5
Modulus of elasticity in bending	EN 310	N/mm ²	1 600	1 500	1 350	1 200	1 050	950
Internal bond	EN 319	N/mm ²	0,30	0,25	0,22	0,18	0,18	0,15
Swelling in thickness 24 h	EN 317	%	8	8	8	8	8	8
Internal bond after boil test	EN 1087-1	N/mm ²	0,07	0,07	0,06	0,06	0,05	0,05
NOTE The values are characterised by moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C.								

10 Supplementary properties

For certain applications, information on some of the properties listed in Table 6 may be required. Upon 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 6.

Table 6 — Supplementary properties and test methods

Property	Test method
Density	EN 323
Dimensional changes	EN 318
Surface soundness	EN 311
Swelling in thickness	EN 317
Sand content	ISO 3340

NOTE For certain applications, information on additional properties not specified in Table 6 may be required.



11 Verification of compliance

11.1 General

Verification of compliance with this standard shall be carried out using the test methods listed in Table 1 to Table 5.

For boards for use in construction applications EN 13986 applies.

11.2 External control

External control of the factory, if any, shall be carried out according to EN 326-2.

Inspection of isolated lots shall be carried out according to EN 326-3.

For formaldehyde potential determined by EN 120 perforator method for both external control and inspection of isolated lots of panels, the requirements set out in Table 1 shall be the arithmetic mean value of at least three boards. Additionally, no individual board shall exceed an upper tolerance limit of + 10 %.

11.3 Factory production control

Factory production control shall be carried out according to EN 326-2.

The properties listed in the Table 1 to Table 5 shall be controlled using intervals between tests not exceeding the intervals given in Table 7. 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 326-2).

Each requirement relating to formaldehyde potential (perforator value) shall be met by the 95 percentile value based on test values of individual boards. The 95 percentile value shall be equal to or less than the respective tabulated values given in Table 1.

Table 7 — Maximum intervals between tests for each production line

Property	Maximum interval between tests
Moisture content	8 h per type of board
Formaldehyde potential ^a Class E 1	24 h per type of board
All other properties listed in Table 1	8 h per type and thickness range
All other properties listed in Table 2 to Table 5	8 h ^b
^a Certain types of flaxboards are known to release little or no formaldehyde. In these cases, the test intervals may be increased. However, it remains the responsibility of the manufacturer or inspection agency, if any, to ensure compliance with this European Standard.	
^b If several thickness ranges are produced in one 8 h shift, the internal control shall be organised so that at least one board of each thickness range is tested in one week's production.	

12 Marking

12.1 Boards marketed within the European Economic Area for construction applications

Boards produced in conformity with this European Standard and marketed in any of the territories of the European Economic Area for use in construction applications as defined in the Construction Products Directive (89/106/EEC) shall be marked according in the requirements of EN 13986.

12.2 Other boards

For other boards produced in conformity with this European Standard, each panel or package shall be clearly marked by the manufacturer by indelible direct printing with at least the following information, in this sequence:

- a) manufacturer's name, trade mark, or identification mark;
- b) number of this European Standard, EN 15197;
- c) panel type FB1, FB2, FB3 or FB4;
- d) nominal thickness;
- e) formaldehyde class;
- f) batch number, or the production week and year.



Bibliography

- [1] EN 1995-1-1, Eurocode 5: Design of timber structures — Part 1-1: General—Common rules and rules for buildings
- [2] EN 335-3, Durability of wood and wood-based products — Definition of hazard classes of biological attack — Part 3: Application to wood-based panels
- [3] EN 309, Particleboards — Definition and classification

