



# SLOVENSKI STANDARD

## SIST EN 300:2006

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### Plošče z usmerjenim ploščatim iverjem (OSB) - Definicije, razvrstitev in specifikacije

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

Platten aus langen, flachen, ausgerichteten Spänen (OSB) - Definitionen, Klassifizierung und Anforderungen

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Panneaux de lamelles minces, longues et orientées (OSB) - Définitions, classification et exigences

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English Version

## Oriented Strand Boards (OSB) - Definitions, classification and specifications

Panneaux de lamelles minces, longues et orientées (OSB)  
- Définitions, classification et exigences

Platten aus langen, flachen, ausgerichteten Spänen (OSB)  
- Definitionen, Klassifizierung und Anforderungen

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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 Central Secretariat has the same status as the official versions.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

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## Foreword

This document (EN 300:2006) 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of an identical text or by endorsement, at the latest by January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

This document supersedes EN 300:1997.

The following principal modifications have been made:

- a) thickness ranges for board types OSB/2, OSB/3 and OSB/4 have been extended;
- b) requirements for moisture resistance have been adapted;
- c) requirements for the marking of boards have been simplified, taking account of the fact that EN 13986 now describes the detailed requirements for CE marking of boards for use in construction;
- d) former Annexes E (list of approval numbers for option 2 board types with certain adhesives or adhesive systems) and F (A-deviations) have been deleted.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, 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.

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## 1 Scope

This European Standard applies to Oriented Strand Boards (OSB). It defines terms, establishes a classification and specifies requirements.

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

NOTE Test methods for determination of mechanical properties for structural purposes are given in EN 789. Determination of characteristic values of mechanical properties and density for structural purposes is given in EN 1058. Design characteristic values for OSB are given in EN 12369-1.

Information on supplementary properties is given in Annex C.

## 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 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 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 dimension 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 594, *Timber structures - Test methods - Racking strength and stiffness of timber frame wall panels*

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EN 596, *Timber structures - Test methods - Soft body impact test of timber framed walls*

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

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

ENV 1156, *Wood-based panels - Determination of duration of load and creep factors*

EN 1195, *Timber structures - Test methods - Performance of structural floor decking*

EN 12369-1, *Wood-based panels - Characteristic values for structural design - Part 1: OSB, particleboards and fibreboards*

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

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

### 3 Terms and definitions

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

**3.1**  
**Oriented Strand Board (OSB)**  
multi-layered board mainly made from strands of wood together with a binder. The strands in the external layer are aligned and parallel to the board length or width. The strands in the internal layer or layers can be randomly orientated or aligned, generally at right angles to the strands in the external layers

**3.2**  
**strand**  
piece of wood of a predetermined shape with a length of more than 50 mm and a typical thickness of less than 2 mm

**3.3**  
**major axis**  
direction in the plane of the board in which the bending properties have the higher values

**3.4**  
**minor axis**  
direction in the plane of the board at right angles to the major axis

**3.5**  
**dry conditions**  
conditions corresponding to service class 1 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 65 % for a few weeks per year



### 3.6

#### humid conditions

conditions corresponding to 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

## 4 Classification of boards

Four types of board are classified and are distinguished as follows:

OSB/1 general purpose non load-bearing boards, and boards for interior fitments for use in dry conditions;

OSB/2 load-bearing boards for use in dry conditions;

OSB/3 load-bearing boards for use in humid conditions;

OSB/4 heavy duty load-bearing boards for use in humid conditions.

NOTE Load-bearing boards are intended for use in the design and construction of load-bearing or stiffening building elements e.g. walls, flooring, roofing and I-beams (see EN 1995-1-1 and/or performance standards) for use in dry or humid conditions

## 5 General requirements for all OSB types

Oriented Strand Boards shall comply with the general requirements listed in Table 1 when dispatched from the producing factory.

NOTE On delivery of OSB panels, their moisture content should be determined prior to use, and allowed to come into equilibrium with the ambient climatic conditions.

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Table 1 — General requirements for all OSB types

No.	Property	Test method	Requirement
1 <sup>a b</sup>	Tolerances on nominal dimensions: — thickness (sanded within and between boards; — thickness (un-sanded) within and between boards; — length and width	EN 324-1	± 0,3 mm ± 0,8 mm ± 3,0 mm
2 <sup>a b</sup>	Edge straightness tolerance	EN 324-2	1,5 mm/m
3 <sup>a b</sup>	Squareness tolerance	EN 324-2	2,0 mm/m
4 <sup>a</sup>	Moisture content	EN 322	2 % to 12 %
5 <sup>b</sup>	Tolerance on the mean density within a board	EN 323	± 15 %
6 <sup>e</sup>	Formaldehyde release according to EN 13986		
	— Class E 1  Perforator value <sup>f</sup>  Steady state emission value <sup>g</sup>	EN 120  EN 717-1	Content ≤ 8 mg/100 g oven dry board <sup>d</sup>  Release ≤ 0,124 mg/m <sup>3</sup> air
	— Class E 2  Perforator value <sup>f</sup>  Steady state emission value	EN 120  EN 717-1	Content > 8 mg/100 g oven dry board <sup>d</sup> ≤ 30 mg/100 g oven dry board  Release > 0,124 mg/m <sup>3</sup> air

<sup>a</sup> Certain users of OSB can require other tolerances (see separate performance standards, e.g. EN 12871).

<sup>b</sup> These values are characterised by a moisture content in the material corresponding to a relative humidity of 65 % and a temperature of 20 °C.

<sup>c</sup> Experience has shown that to ensure compliance with the limit for class E1 the rolling average of the EN 120 values found from the factory production control over a period of six months should not exceed 6,5 mg formaldehyde 100 g panel mass for OSB.

<sup>d</sup> Initial type testing may be carried out for formaldehyde class E1 (established products only) on the basis of existing data with either EN 120 or pr EN 717-1 testing, either from factory production control or from external inspection, see EN 13986.

<sup>e</sup> For more detail concerning the formaldehyde classes and requirements, see EN 13986.

<sup>f</sup> The perforator values apply to boards with moisture content H of 6,5 %. In the case of boards with different moisture content (in the range of 3 % ≤ H ≤ 10 %) the perforator value shall be multiplied by a factor F which can be calculated from the following equation:  $F = -0,133 H + 1,86$ .

## 6 Requirement values

The values which are given in Tables 2 to 7, determined by the relevant test methods as listed in Clauses 7 to 10, are to be used for factory production control (FPC) purposes only and shall not be used in design calculations.

With the exception of the moisture resistance requirements in Tables 5 and 7 and the swelling in thickness requirements given in Tables 2 to 4 and 6, the values given in Tables 2 to 7 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 the moisture resistance requirements in Tables 5 and 7 and swelling in thickness (Tables 2 to 4 and 6) are characterised by a moisture content in the material before the treatment corresponding to a relative humidity of 65 % and a temperature of 20 °C.

The requirements in Tables 2 to 7 shall be met by 5 percentile values (95 percentile values in the case of swelling in thickness) based on the mean values for individual boards and calculated in accordance with EN 326-1, or (for continuous internal FPC) EN 326-2. In the case of swelling in thickness they shall be equal to or less than the values in the Tables 2 to 4 and 6 and in the case of all other properties they shall be equal to or greater than the values in the tables.

## 7 Requirements for non load-bearing boards, general purpose boards and boards for interior fitments for use in dry conditions (Type OSB/1)

This clause specifies the requirements in addition to those specified in Clause 5, for non load-bearing boards, general purpose boards and boards for interior fitments for use in dry conditions. Therefore, boards of this type shall comply with the requirements given in Table 1 and Table 2.

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

For definitions of values given in the tables see Clause 6.

**Table 2 — Non load-bearing boards, general purpose boards and boards for interior fitments for use in dry conditions — Requirements for specified mechanical and swelling properties**

Board type (technical class) OSB/1	Test method	Unit	Requirement		
			Board thickness range (mm, nominal)		
			6 to 10	> 10 to < 18	18 to 25
Property					
Bending strength — major axis	EN 310	N/mm <sup>2</sup>	20	18	16
Bending strength — minor axis	EN 310	N/mm <sup>2</sup>	10	9	8
Modulus of elasticity in bending — major axis	EN 310	N/mm <sup>2</sup>	2 500	2 500	2 500
Modulus of elasticity in bending — minor axis	EN 310	N/mm <sup>2</sup>	1 200	1 200	1 200
Internal bond	EN 319	N/mm <sup>2</sup>	0,30	0,28	0,26
Swelling in thickness — 24 h immersion	EN 317	%	25	25	25