



**SLOVENSKI STANDARD**  
**oSIST prEN 13228:2010**  
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Wood flooring - Solid wood overlay flooring elements including blocks with an interlocking system

Holzfussböden - Massivholz-Overlay-Parkettstäbe einschliesslich mit einem Verbindungssystem

Plancher en bois - Lames de parquets en bois massifs de recouvrement, blocs anglais compris, avec systèmes de guidage

**Ta slovenski standard je istoveten z: prEN 13228 rev**

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**ICS:**

79.080

Polizdelki iz lesa

Semi-manufactures of timber

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**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 13228**

November 2009

ICS 79.080

Will supersede EN 13228:2002

English Version

**Wood flooring - Solid wood overlay flooring elements including  
blocks with an interlocking system**

Plancher en bois - Lames de parquets en bois massifs de  
recouvrement, blocs anglais compris, avec systèmes de  
guidage

Holzfußböden - Massivholz-Overlay-Parkettstäbe  
einschliesslich mit einem Verbindungssystem

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 175.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

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## Foreword

This document (prEN 13228:2009) has been prepared by Technical Committee CEN/TC 175 "Round and sawn timber", the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13228:2002.

Compared with EN 13228:2002, the following modifications have been made :

- a) Modification of the 2<sup>nd</sup> sentence of the scope;
- b) Modification of dimensional characteristics of overlay flooring element (5.4.2.2);
- c) Modification of tolerance on length (Table 8 of 5.4.4.1);
- d) Modification of limit deviation of cup (5.4.4.2), bow (5.4.4.4), spring (5.4.4.5);
- e) Deletion of "specific site requirements (5.5.2);
- f) Updating of Clause 2 "Normative references" and Bibliography.

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## Introduction

This European Standard is one of a series of standards about wood flooring and wood panelling and cladding.

This standard specifies the characteristics of solid wood flooring elements. It is based upon current dimensional standards used in the industry and other characteristics together with functions which have been verified by test.

A large amount of knowledge exists about solid wood flooring elements and values for product characteristics are attested by long use and experience. It is therefore not necessary to have test results. For new products technical data will have to be verified by testing.

The appearance of the wood flooring is mainly influenced by species, classification and the pattern.

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## 1 Scope

This European Standard specifies the characteristics of solid wood overlay flooring including blocks with an interlocking system for internal use as flooring. It applies to elements. This standard does not apply to panels made from elements, for which a separate standard<sup>1</sup> is in course of preparation.

This standard covers elements with and without surface coating.

## 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 844-1:1995, *Round and sawn timber – Terminology – Part 1: General terms common to round timber and sawn timber*.

EN 844-3:1995, *Round and sawn timber – Terminology – Part 3: General terms relating to sawn timber*.

EN 844-4:1997, *Round and sawn timber – Terminology – Part 4: Terms relating to moisture content*.

EN 844-6:1997, *Round and sawn timber – Terminology - Part 6: Terms relating to dimensions of sawn timber*.

EN 844-7:1997, *Round and sawn timber – Terminology - Part 7: Terms relating to anatomical structure of timber*.

EN 844-9:1997, *Round and sawn timber – Terminology - Part 9: Terms relating to features of sawn timber*.

EN 844-10:1998, *Round and sawn timber – Terminology - Part 10: Terms relating to stain and fungal attack*.

EN 844-11:1998, *Round and sawn timber – Terminology - Part 11: Terms relating to degrade by insects*.

EN 844-12:2000, *Round and sawn timber – Terminology - Part 12: Additional terms and general index*.

EN 1310:1997, *Round and sawn timber - Method of measurement of features*.

EN 1311, *Round and sawn timber - Method of measurement of biological degrade*.

EN 1534, *Wood and parquet flooring – Determination of resistance to indentation (Brinell) - Test method*.

EN 13183-1, *Moisture content of a piece of sawn timber - Part 1: Determination by oven dry method*.

EN 13183-2, *Moisture content of a piece of sawn timber - Part 2: Estimation by electrical resistance method*.

EN 13647, *Wood and parquet flooring and wood panelling and cladding – Measurement of geometrical characteristics*.

EN 13756:2002, *Wood flooring – terminology*.

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 844-1:1995, EN 844-3:1995, EN 844-4:1997, EN 844-6:1997, EN 844-9:1997, EN 844-10:1998, EN 844-11:1998, EN 844-12:2000 and in EN 13756:2002 and the following apply:

#### 3.1

##### **block**

element with an interlocking system, defined by the relevant dimensional limits in 5.4.3 and Tables 7 and 8.

#### 3.2

##### **overlay flooring element**

element with an interlocking system with a thickness which renders it suitable for laying on a continuous supporting surface

[EN 13756:2002]

#### 3.3

##### **interlocking system**

system of assembly based upon a male and a female profile that does not have a load-bearing function, allowing the positioning of elements during installation

[EN 13756:2002]

#### 3.4

##### **thickness above the groove**

thickness between the face and any discontinuity such as a change in the profile (excluding chamfering), a groove/glue pocket or a glue line (excluding the glue line of finger-joints)

[EN 13756:2002]

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### 4 Symbols and abbreviations

- $L$  Length of the face of the element
- $b$  Width of the face of the element
- $b_1$  Depth of the female profile
- $b_2$  Width of the male profile
- $b_3$  Undercut
- $t$  Thickness between the face and the back of the element
- $t_1$  Thickness above the groove
- $t_2$  Width of the female profile
- $t_3$  Thickness of the male profile
- $t_4$  Thickness of the part below the male profile
- $\alpha$  Angle that an edge makes to a plane normal to adjacent face, in degrees.



## 5 Specific product requirements

### 5.1 Wood species

A list of the most commonly used species for wood flooring elements as described in this standard is given in Annex A.

### 5.2 Appearance

#### 5.2.1 General rules

Tables 1 to 6 define the classification relating to appearance rules for the face and for the non-visible parts (back and edges) of an element of the most commonly used species for solid wood flooring as defined in this standard.

Features shall be measured according to EN 1310 (knots assessed according to the general method of 4.1 in EN 1310:1997). Biodeterioration is measured according to EN 1311.

A classification with three appearance classes is specified, designated O, Δ and □.

A classification named "Free class" is based on the principles laid out in Annex B.

The face shall include all the visible surface of the element. It shall therefore extend to the chamfering<sup>1)</sup> if any.

The face shall be free from shake and the wood shall be sound.

Any continuous glue joint which allows renovation without significantly changing the appearance or the functional characteristics is acceptable.

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1) the chamfering is visible when elements are assembled.

## 5.2.2 Rules for the most commonly used species

### 5.2.2.1 *Quercus* spp. (oak)

Rules for oak are given in Table 1.

**Table 1 — Classification for *Quercus* spp. (oak)**

Face of the element			
Features	Class		
	○	Δ	□
<b>Sound sapwood</b>	Not permitted	Permitted	Slight traces permitted
<b>Knots</b> Sound and intergrown	Permitted if: diameter ≤ 2 mm	Permitted if: diameter ≤ 5 mm	Permitted if: diameter ≤ 15 mm
Unsound knots	Not permitted	diameter ≤ 3 mm	diameter ≤ 10 mm
<b>Checks</b>	Not permitted	Permitted up to 15 mm in length	All features permitted without limit to size or quantity if these do not impair the strength or the wearing quality of the wood flooring.
<b>Bark pockets</b>	Not permitted	Not permitted	
<b>Lightning shake</b>	Not permitted	Not permitted	
<b>Slope of grain</b>	Permitted, no limit	Permitted, no limit	
<b>Colour variation</b>	Slight variation permitted	Permitted <sup>a</sup>	
<b>Medullary ray</b>	Permitted	Permitted	
<b>Biodeterioration</b>	Not permitted	Not permitted	Not permitted, except blue stain and black holes
<b>Non-visible parts</b>			
All features permitted without limit to size or quantity if these do not impair the strength or the wearing quality of the wood flooring.			
Sound sapwood is permitted from the back up to the upper part of the male profile of the interlocking system without taking into account the limits set for the face.			
<sup>a</sup> Brown oak.			

### 5.2.2.2 *Fraxinus excelsior* (European ash) and *Acer* spp. (maple)

Rules for European ash and maple are given in Table 2.

**Table 2 — Classification for *Fraxinus excelsior* (European ash) and *Acer* spp. (maple)**

Face of the element			
Features	Class		
	○	Δ	□
<b>Sound sapwood</b>	Not applicable	Not applicable	Not applicable
<b>Knots</b> Sound and intergrown $b < 70 \text{ mm}$ $b \geq 70 \text{ mm}$  Unsound knots	Permitted if:  diameter $\leq 2 \text{ mm}$ diameter $\leq 3 \text{ mm}$  Not permitted	Permitted if:  diameter $\leq 5 \text{ mm}$ diameter $\leq 10 \text{ mm}$  diameter $\leq 3 \text{ mm}$	Permitted if:  diameter $\leq 15 \text{ mm}$ diameter $\leq 30 \text{ mm}$  diameter $\leq 10 \text{ mm}$
<b>Checks</b>	Not permitted	Not permitted	Not permitted
<b>Bark pockets</b>	Not permitted	Not permitted	Not permitted
<b>Lightning shake</b>	Not permitted	Not permitted	Not permitted
<b>Slope of grain</b>	Permitted, no limit	Permitted, no limit	Permitted, no limit
<b>Colour variation</b>	Slight variation permitted. Slight traces of natural discoloration (mineral lines) permitted.	Permitted	Permitted
<b>Stick marks</b>	Not permitted	Permitted	Permitted
<b>Biodeterioration</b>	Not permitted	Not permitted	Not permitted, except blue stain and black holes
<b>Non-visible parts</b>			
All features permitted without limit to size or quantity if these do not impair the strength or the wearing quality of the wood flooring.			

### 5.2.2.3 *Fagus sylvatica* (European beech)

Rules for European beech are given in Table 3.

**Table 3 — Classification for *Fagus sylvatica* (European beech)**

Face of the element			
Features	Class		
	○	Δ	□
<b>Sound sapwood</b>	Not applicable	Not applicable	Not applicable
<b>Knots</b> Sound and intergrown $b < 70 \text{ mm}$ $b \geq 70 \text{ mm}$  Unsound knots	Permitted if:  diameter $\leq 2 \text{ mm}$ diameter $\leq 3 \text{ mm}$  Not permitted	Permitted if:  diameter $\leq 5 \text{ mm}$ diameter $\leq 10 \text{ mm}$  diameter $\leq 3 \text{ mm}$	Permitted if:  diameter $\leq 15 \text{ mm}$ diameter $\leq 30 \text{ mm}$  diameter $\leq 10 \text{ mm}$
<b>Checks</b>	Not permitted	Not permitted	Not permitted
<b>Bark pockets</b>	Not permitted	Not permitted	Not permitted
<b>Lightning shake</b>	Not permitted	Not permitted	Not permitted
<b>Slope of grain</b>	Permitted, no limit	Permitted, no limit	Permitted, no limit
<b>Colour variation</b>	Slight variation permitted <sup>a</sup> . Slight traces of natural discoloration permitted.	Permitted	Permitted
<b>Red heart</b>	Not permitted	Permitted	Permitted
<b>Stick marks</b>	Not permitted	Permitted	Permitted
<b>Medullary ray</b>	Permitted	Permitted	Permitted
<b>Biodeterioration</b>	Not permitted	Not permitted	Not permitted, except blue stain and black holes
<b>Non-visible parts</b>			
All features permitted without limit to size or quantity if these do not impair the strength or the wearing quality of the wood flooring.			
<sup>a</sup> Permitted for steamed beech.			