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Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking

EESTI STANDARDIKESKUS
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NATIONAL FOREWORD

See Eesti standard EVS-EN 13986:2004+A1:2015 sisaldab Euroopa standardi EN 13986:2004+A1:2015 ingliskeelset teksti.	This Estonian standard EVS-EN 13986:2004+A1:2015 consists of the English text of the European standard EN 13986:2004+A1:2015.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.04.2015.	Date of Availability of the European standard is 01.04.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 83.140.99

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13986:2004+A1

April 2015

ICS 83.140.99

Supersedes EN 13986:2004

English Version

Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking

Panneaux à base de bois destinés à la construction - Caractéristiques, évaluation de conformité et marquage

Holzwerkstoffe zur Verwendung im Bauwesen - Eigenschaften, Bewertung der Konformität und Kennzeichnung

This European Standard was approved by CEN on 8 July 2004 and includes Amendment 1 approved by CEN on 19 January 2015.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Ref. No. EN 13986:2004+A1:2015 E

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Foreword

This document (EN 13986:2004+A1:2015) 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of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by January 2017.

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 includes Amendment 1, approved by CEN on 2015-01-19.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ⟨A1⟩ ⟨A1⟩.

This document has been prepared under Mandate M/113 given to CEN by the European Commission and the European Free Trade Association, as revised by the Standing Committee on Construction on 14 May 2003 and supports essential requirements of EU Regulations.

For relationship with ⟨A1⟩ Regulation (EU) No. 305/2011 ⟨A1⟩, see the informative Annex ZA, which is an integral part of this document.

This document supersedes ⟨A1⟩ EN 13986:2004 ⟨A1⟩.

⟨A1⟩ *Deleted text* ⟨A1⟩

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document defines wood-based panels for use in construction and specifies the relevant characteristics and the appropriate test methods to determine these characteristics for wood-based panels, unfaced, overlaid, veneered or coated:

- for internal use as structural components in dry conditions[1)];
- for internal (or protected external) use as structural components in humid conditions[2)];
- for external use as structural components[3)];
- for internal use as non-structural components in dry conditions[1)];
- for internal (or protected external) uses as non structural components in humid conditions[2)];
- for external use as non-structural components[3)];
- for use as structural floor decking on joists in dry[1)] or humid[2)] or external[3)] conditions;
- for use as structural roof decking on joists in dry[1)] or humid[2)] or external[3)] conditions;
- for use as structural wall sheathing on studs in dry[1)] or humid[2)] or external[3)] conditions.

It provides for the evaluation of conformity and the requirements for marking these products.

This document covers wood-based panels in the form of solid wood panels, LVL [4)], plywood, OSB, particleboards (chipboards) either resin- or cement-bonded, wet process fibreboards (hardboards, medium boards, softboards) and dry process fibreboards (MDF) for use in construction. They may contain chemical agents to improve their reaction to fire and their resistance to biological attack, e.g. by fungi and insects.

This document is not intended to be applicable to wood-based panels for use in non-constructional applications.

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*

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1) Dry conditions are defined in 3.8.2. Boards of this type are suitable for use in biological hazard class 1 of EN 335-3.

2) Humid conditions are defined in 3.8.3. Boards of this type are suitable for use in biological hazard classes 1 and 2 of EN 335-3.

3) Exterior conditions are defined in 3.8.4. Boards of this type are suitable for use in biological hazard classes 1, 2, 3 and 4 of EN 335-3.

4) [A1] *deleted text* [A1]. PrEN 14374 — Timber structures: Laminated Veneer Lumber (LVL), for use as a structural product — is being prepared by CEN/TC 124.

EN 300, *Oriented Strand Boards (OSB) - Definitions, classification and specifications*

EN 309, *Wood particleboards — Definitions and classification*

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

EN 312, *Particleboards - Specifications*

EN 313-2, *Plywood - Classification and terminology - Part 2: Terminology*

EN 314-1, *Plywood - Bonding quality - Part 1: Test methods*

EN 314-2, *Plywood - Bonding quality - Part 2: Requirements*

EN 316, *Wood fibre boards - Definition, classification and symbols*

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

EN 319, *Particleboards and fibreboards - Determination of tensile strength perpendicular to the plane of the board*

EN 321, *Wood-based panels - Determination of moisture resistance under cyclic test conditions*

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

EN 325, *Wood-based panels - Determination of dimensions of test pieces*

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 335-1, *Durability of wood and derived products — Definition of hazard classes of biological attack — Part 1: General*

EN 335-2, *Durability of wood and wood-based products — Definition of hazard classes of biological attack — Part 2: Application to solid wood*

EN 335-3, *Durability of wood and wood-based products — Definition of hazard classes of biological attack — Part 3: Application to wood-based panels*

[A1] EN 383, *Timber Structures - Test methods - Determination of embedment strength and foundation values for dowel type fasteners*

EN 594, *Timber structures - Test methods - Racking strength and stiffness of timber frame wall panels* [A1]

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

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

EN 622-2, *Fibreboards - Specifications - Part 2: Requirements for hardboards*

EN 622-3, *Fibreboards - Specifications - Part 3: Requirements for medium boards*

EN 622-4, *Fibreboards - Specifications - Part 4: Requirements for softboards*

[A1] EN 622-5 [A1], *Fibreboards - Specifications - Part 5: Requirements for dry process boards (MDF)*

EN 633, *Cement-bonded particleboards - Definition and classification*

EN 634-2, *Cement-bonded particleboards — Specifications — Part 2: Requirements for OPC bonded particleboards for use in dry, humid and exterior*

EN 636, *Plywood - Specifications*

▌A1⟩ EN 717-1 ⟨A1▌, *Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method*

EN 717-2, *Wood-based panels - Determination of formaldehyde release - Part 2: Formaldehyde release by the gas analysis method*

▌A1⟩ EN 789 ⟨A1▌, *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*

▌A1⟩ EN 1156 ⟨A1▌, *Wood-based panels - Determination of duration of load and creep factors*

EN 1195, *Timber structure — Test methods — Performance of structural floor decking*

▌A1⟩ EN 1995-1-1 ⟨A1▌, *Eurocode 5 — Design of timber structures — Part 1-1: General rules and rules for buildings*

▌A1⟩ EN 12114, *Thermal performance of buildings - Air permeability of building components and building elements - Laboratory test method* ⟨A1▌

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

EN 12369-2, *Wood-based panels - Characteristic values for structural design - Part 2: Plywood*

EN 12524, *Building materials and products — Hygrothermal properties — Tabulated design values*

EN 12664, *Thermal performance of building materials and products - Determination of thermal resistance by means of guarded hot plate and heat flow meter methods - Dry and moist products of medium and low thermal resistance*

EN 12775, *Solid wood panels - Classification and terminology*

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

▌A1⟩ CEN/TR 12872 ⟨A1▌, *Wood-based panels - Guidance on the use of load-bearing boards in floors, walls and roofs*

EN 13353, *Solid wood panels (SWP) — Requirements*

CEN/TS 13354, *Solid wood panels — Bonding quality — Test method*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

[A1] EN 14279 [A1], *Laminated Veneer Lumber (LVL) — Specifications, definitions, classification and requirements*

[A1] EN 14755 [A1], *Extruded particleboards - Specifications*

[A1] EN 15197, *Wood-based panels - Flaxboards - Specifications* [A1]

EN ISO 354, *Acoustics - Measurement of sound absorption in a reverberation room (ISO 354:2003)*

EN ISO 12572:2001, *Hygrothermal performance of building materials and products - Determination of water vapour transmission properties (ISO 12572:2001)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
wood-based panel
solid wood panel, laminated veneer lumber (LVL), plywood, oriented strand board (OSB), resin-bonded particleboard, cement-bonded particleboard or fibreboard

3.2
solid wood panel (SWP)
wood-based panel as defined in EN 12775 consisting of pieces of timber glued together on their edges and, if multi-layer, on their faces

3.2.1
solid wood panel for internal use as a structural component in dry conditions
solid wood panel incorporating the performance characteristics from 4.1 that are relevant to board type SWP/1 in EN 13353

NOTE The performance characteristics relevant to SWP/1 in structural use and their requirements are given in Table A.1.

3.2.2
solid wood panel for internal use as a structural component in humid conditions
solid wood panel incorporating the performance characteristics from 4.2 that are relevant to board type SWP/2 in EN 13353

NOTE The performance characteristics relevant to SWP/2 in structural use and their requirements are given in Table A.1.

3.2.3
solid wood panel for external use as a structural component
solid wood panel incorporating the performance characteristics from 4.3 that are relevant to board type SWP/3 in EN 13353

NOTE The performance characteristics relevant to SWP/3 in structural use and their requirements are given in Table A.1.

3.2.4
solid wood panel for internal use as a non-structural component in dry conditions
solid wood panel incorporating the performance characteristics from 4.4 that are relevant to board type SWP/1 in EN 13353

NOTE The performance characteristics relevant to SWP/1 in non-structural use and their requirements are given in Table A.1.