



SLOVENSKI STANDARD

SIST EN 1072:1997

01-april-1997

Vežan les - Opis upogibnih lastnosti konstrukcijskega vežanega lesa

Plywood - Description of bending properties for structural plywood

Sperrholz - Beschreibung der Biegeeigenschaften von Bau-Sperrholz

Contreplaqué - Description des propriétés de flexion pour utilisation en structure

Ta slovenski standard je istoveten z: **EN 1072:1995**

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ICS:

79.060.10 Vežan les Plywood

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EUROPEAN STANDARD

EN 1072

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 1995

ICS 79.060.10

Descriptors: wooden boards, plywood, tests, mechanical properties, flexural strength, classifications

English version

**Plywood - Description of bending properties for
structural plywood**Contreplaqué - Description des propriétés de
flexion pour utilisation en structureSperrholz - Beschreibung der Biegeeigenschaften
von Bau-Sperrholz**STANDARD PREVIEW**
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CENEuropean Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

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Foreword

This European Standard has been prepared by the Technical Committee CEN/TC 112 "Wood-based panels" of which the secretariat 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of an identical text or by endorsement, at the latest by January 1996, and conflicting national standards shall be withdrawn at the latest by January 1996.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

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1 Scope

This European Standard specifies how bending properties can be described and used to identify structural plywood. These bending properties are derived from medium sized test pieces according to EN 789 and EN 1058.

NOTE: A standard "Wood-based panels – Characteristic values for established products" is in course of preparation.

2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

prEN 789

Timber structures – Testing of wood-based panels for the determination of mechanical properties for structural purposes

prEN 1058

Wood-based panels – Determination of characteristic values of mechanical properties and density

3 Definition and symbols

3.1 Definition

For the purposes of this standard, the following definition applies:

length direction: The direction of the panel, parallel to the direction of the grain of the outer layers. Bending properties are given in this direction (subscript 0) and perpendicular to this direction (subscript 90) (see 3.2.2).

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3.2 Symbols and subscripts

3.2.1 Symbols

f_m	bending strength in newtons per square millimeter
E_m	modulus of elasticity in newtons per square millimeter
M	bending moment in newton millimetres
I	second moment of area $\left(\frac{bt^3}{12} \right)$ in millimetres to the fourth power
W	section modulus $\left(\frac{bt^2}{6} \right)$ in cubic millimetres
b	width in millimetres
t	nominal thickness of the panel, given by the manufacturer, in millimetres
$i = \frac{I}{b}$	second moment of area per unit width in cubic millimetres

$m = \frac{M}{b}$ bending capacity in newton millimetres per millimetre

$E_m i$ bending stiffness per unit width in kilonewton square millimetres per millimetre

3.2.2 Subscripts

k characteristic values

m bending

0 length direction of the panel

90 perpendicular to the length direction

4 Description

The bending properties for structural plywood shall be described by the following characteristic values:

$m_{0, k}; m_{90, k}$ characteristic bending capacity

$f_{m, 0, k}; f_{m, 90, k}$ characteristic bending strength

$E_{m, 0, k} i; E_{m, 90, k} i$ characteristic bending stiffness per unit width

$E_{m, 0, k}; E_{m, 90, k}$ characteristic bending modulus of elasticity

5 Identification

The characteristic bending values of plywood shall be expressed using the following format.

Bending properties			
Nominal thickness (mm)			
(1) $f_{m, k} = \text{*****}/\text{*****}$ (5) (6)	N/mm ²	(3) $m_k = \text{*****}/\text{*****}$ (5) (6)	Nmm/mm
(2) $E_{m, k} = \text{*****}/\text{*****}$ (5) (6)	N/mm ²	(4) $E_{m, k} i = \text{*****}/\text{*****}$ (5) (6)	kNmm ² /mm
(1): characteristic bending strength (5 percentile value) (2): characteristic bending modulus of elasticity (50 percentile value [mean]) (3): characteristic bending capacity (5 percentile value) (4): characteristic bending stiffness per unit width (50 percentile value [mean]) (5): value in the length direction (6): value perpendicular to the length direction			

This identification is not related to the plywood bond quality, biological durability etc.

The characteristic bending properties shall in each single case be adjusted with respect to load duration, service class and safety level¹⁾.

¹⁾ See ENV 1995-1-1

6 Conversion

Conversion between bending strength and bending capacity, or bending modulus of elasticity and bending stiffness per unit width can be calculated using the following equations:

$$f_m = \frac{m b}{W} \text{ in newtons per square millimetre}$$

$$E_m = \frac{E_m i b}{I} \text{ in newtons per square millimetre}$$

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Annex A (informative)

Bibliography

EN 313-2

Plywood – Classification and terminology – Part 2: Terminology

EN 636-1

Plywood – Specifications – Part 1: Requirements for plywood for use in dry conditions²⁾

EN 636-2

Plywood – Specifications – Part 2: Requirements for plywood for use in humid conditions²⁾

EN 636-3

Plywood – Specifications – Part 3: Requirements for plywood for use in exterior conditions²⁾

EN 1438

Symbols for use in documentation of timber and wood based products²⁾

ENV 1995-1-1

Eurocode 5 – Design of timber structures – Part 1-1: General rules and rules for buildings

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²⁾ At present at the draft stage