



National Standards Authority of Ireland

IRISH STANDARD

I.S. ENV 14272:2002

ICS 79.060.10

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PLYWOOD - CALCULATION METHOD FOR SOME MECHANICAL PROPERTIES

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on.
October 22, 2002*

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EUROPEAN PRESTANDARD
PRÉNORME EUROPÉENNE
EUROPÄISCHE VORNORM

ENV 14272

June 2002

ICS 79.060.10

English version

Plywood - Calculation method for some mechanical properties

Contreplaqué - Méthode de calcul pour certaines
caractéristiques

Sperrholz - Rechenverfahren für einige mechanische
Eigenschaften

This European Prestandard (ENV) was approved by CEN on 5 April 2002 as a prospective standard for provisional application.

The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into a European Standard.

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ENV 14272:2002 (E)

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Foreword

This document ENV 14272:2002 has been prepared by Technical Committee CEN/TC 112 "Wood-based panels", the secretariat of which is held by DIN.

The annexes A and B are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this European Prestandard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

ENV 14272:2002 (E)

1 Scope

This European Prestandard gives a calculation method for the estimation of some mechanical properties of plywood (strength and stiffness) with a symmetrical composition.

The resulting values are intended as predictive only.

2 Normative references

This European Prestandard 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 Prestandard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 635-2, *Plywood — Classification by surface appearance — Part 2: Hardwood.*

EN 635-3, *Plywood — Classification by surface appearance — Part 3: Softwood.*

EN 636-1, *Plywood — Specifications — Part 1: Requirements for plywood for use in dry conditions.*

EN 636-2, *Plywood — Specifications — Part 2: Requirements for plywood for use in humid conditions.*

EN 636-3, *Plywood — Specifications — Part 3: Requirements for plywood for use in exterior conditions.*

3 Principle

To derive by calculation the mechanical properties of a panel, using the corresponding mechanical properties of the wood species compounding the layers. Each pair of layers (or layer) values are weighted by a geometrical factor related to its weight in the panel cross section.

4 Terms and definitions and symbols

4.1 Terms and definitions

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

4.1.1

characteristic strength

population fifth percentile value relating to a temperature of 20 °C and a relative humidity of 65 %

4.1.2

characteristic stiffness

either the population fifth percentile or the mean value relating to a temperature of 20 °C and a relative humidity of 65 %

4.1.3

characteristic density

population fifth percentile value with mass and volume corresponding to equilibrium at a temperature of 20 °C and a relative humidity of 65 % either of the wood species or of the panels, single species or mixed species

The density values found from calculation refer to the minimum acceptable density of veneers used in the lay-up of plywood. In the case of single species plywood these values are taken as the characteristic values for the plywood.

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