

Wood-based panels — Guidance on the use of load-bearing boards in floors, walls and roofs

ICS 79.060.01

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National foreword

This Draft for Development is the official English language version of ENV 12872:2000.

This publication is no to be regarded as a British Standard.

It is being issued in the Draft for Development series of publications and is of a provisional nature because it is essentially a guidance document on use and installation. It should be applied on this provisional basis, so that information and experience of its practical application may be obtained.

Comments arising from the use of this Draft for Development are requested so that UK experience can be reported to the European organization responsible for its conversion into a European Standard. A review of this publication will be initiated 2 years after its publication by the European organization so that a decision can be taken on its status at the end of its three-year life. The commencement of the review period will be notified by an announcement in *Update Standards*.

According to the replies received by the end of the review period, the responsible BSI Committee will decide whether to support the conversion into a European Standard, to extend the life of the review period or to withdraw it. Comments should be sent in writing to the Secretary of BSI Technical Committee B/541, Wood based panels, at 389 Chiswick High Road, London W4 4AL, giving the document reference and clause number and proposing, where possible, an appropriate revision of the text.

A list of organizations represented on this committee can be obtained on request to its secretary.

Cross-references

The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled “International Standards Correspondence Index”, or by using the “Find” facility of the BSI Standards Electronic Catalogue.

Summary of pages

This document comprises a front cover, an inside front cover, the ENV title page, pages 2 to 21 and a back cover.

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Amendments issued since publication

Amd. No.	Date	Comments

English version

Wood-based panels - Guidance on the use of load-bearing boards in floors, walls and roofs

Panneaux à base de bois - Guide pour l'utilisation des panneaux structurels dans planchers, murs et toitures

Holzwerkstoffe - Leitfaden für die Verwendung von tragenden Platten in Böden, Wänden und Dächern

This European Prestandard (ENV) was approved by CEN on 14 February 2000 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.

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

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EUROPEAN 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 Prestandard has been prepared by Technical Committee CEN/TC 112 "Wood-based panels", the secretariat of which is held by DIN.

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, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard gives guidance on the use of wood-based panels in structural applications as structural floor and roof decking on joists or structural wall sheathing on studs in accordance with EN 12871. It provides information on:

- inspection at site;
- transport and delivery;
- handling;
- stacking;
- storage;
- moisture content, conditioning and the effects of moisture;
- cutting and machining;
- selection;
- installation.

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.

EN 300

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

EN 312-4

Particleboards – Specifications – Part 4: Requirements for load-bearing boards for use in dry conditions

EN 312-5

Particleboards – Specifications – Part 5: Requirements for load-bearing boards for use in humid conditions

EN 312-6

Particleboards – Specifications – Part 6: Requirements for heavy duty load-bearing boards for use in dry conditions

EN 312-7

Particleboards – Specifications – Part 7: Requirements for heavy duty load-bearing boards for use in humid conditions

EN 622-2

Fibreboards – Specifications – Part 2: Requirements for hardboards

EN 622-3

Fibreboards – Specifications – Part 3: Requirements for medium boards

EN 622-5

Fibreboards – Specifications – Part 5: Requirements for dry process boards (MDF)

EN 634-2

Cement-bonded particleboards – Specifications – Part 2: Requirements for OPC bonded particleboards for use in dry, humid and exterior conditions

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

EN 12871

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

ENV 1995-1-1

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

3 Definitions

For the purposes of this standard the following definitions apply:

3.1 Service Classes

3.1.1 Service class 1: is characterised by a moisture content in the materials corresponding to a temperature of 20 °C and the relative humidity of the surrounding air only exceeding 65 % for a few weeks per year [ENV 1995-1-1 : 1993].

3.1.2 Service class 2: is characterised by a moisture content in the materials corresponding to a temperature of 20 °C and the relative humidity of the surrounding air only exceeding 85 % for a few weeks per year [ENV 1995-1-1 : 1993].

3.1.3 Service class 3: climatic conditions leading to higher moisture contents than in service class 2 [ENV 1995-1-1 : 1993].

3.2 Structural floor decking: An assembly of wood-based panels supported on joists over which the decking spans. The characteristic of the decking is that it is supported by joists and, when subjected to load, is free to deflect between the joists.

3.3 Structural wall sheathing: Wood-based panel capable of providing mechanical resistance to a wall structure.

3.4 Structural roof decking: An assembly of wood-based panels supported on joists over which the roof decking spans. The characteristic of the decking is that it is supported by joists and, when subjected to load, is free to deflect between the joists.

3.5 Warm roof: Roof design in which the panels supported on joists are placed below the insulation. The panels are considered to be under conditions corresponding to service class 1.

3.6 Cold roof: Roof design in which the panels and some of the supporting joists are placed above the insulation. The panels are considered to be under conditions corresponding to service class 2.

3.7 Sub floor: Structural panel meant to be covered by overlays.

4 Performance requirements

The requirements to ensure sufficient margin of safety against failure, damage or excessive deflection are given in EN 12871.

5 Inspection at site

The following should be checked based on the marking of the panel and/or the manufacturers documentation and/or the designers specification:

- Grade or class according to EN specification standard;
- Thickness;
- Service class;
- Biological durability hazard class;
- Surface (sanded or unsanded);
- Edges (tongue and groove or other type of profile);
- Joist or stud spacing;
- Load category;
- Main load-bearing direction for OSB, plywood and solid wood panels only.

6 Transport and delivery

Panels should be adequately protected by a waterproof covering during transportation. Edges should be well protected from rain or traffic spray. Edge protection should also be provided to avoid damage by ropes, straps or other banding. This applies particularly to profiled panels such as tongued and grooved panels.

Panels should be stacked properly to avoid sagging or other distortion, see clause 8.

If packing includes banding or strapping this should be removed as soon as possible after delivery to prevent any permanent deformation of the panels. When packs are delivered with edge or face protection panels, these should be left in place until the pack is required for use.

7 Handling

When lifting, moving and stacking panels, edge protection should also be provided to avoid damage by lifting ropes and/or forklifts.

When handling prefinished panels, it is essential to avoid damage or dirt on the finished surfaces.

Prefinished panels should always be lifted from a stack and never slid.

8 Stacking

Panels should be stacked flat on a level surface with all four edges flush. The ideal base is a close boarded or slatted pallet.

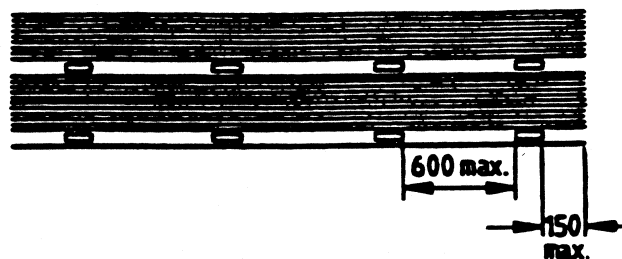
If this is not possible the panels should be carefully stacked on battens of equal thickness at centres not exceeding 600 mm as shown in figure 1.

Intermediate battens are recommended every 15 to 20 panels to allow through ventilation, they shall be placed directly above those below. The battens should be placed parallel to the short edges across the full width. Overhang of the panels at the ends of the stack should not exceed 150 mm. Where stacks are placed on top of one another, the bearers should line up vertically to prevent distortion.

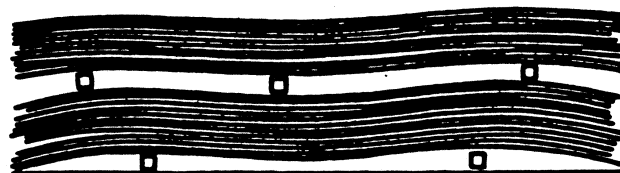
The top of the stack should be covered.

Stacking on edge should be avoided whenever possible. Where space will only permit edge stacking then the edges should not be permitted to come into direct contact with the floor to avoid possible moisture pick-up or damage to the edges. Panels should not be leant against walls but supported by a braced, purpose made rack using thick (> 18 mm) base and back panels (see figure 2).

In case of tongued and grooved panels, edge stacking on the tongue should be avoided.



CORRECT



INCORRECT

Figure 1 – Panel storage