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# WOOD-BASED PANELS - DETERMINATION OF WITHDRAWAL CAPACITY OF FASTENERS

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English version

**Wood-based panels - Determination of withdrawal capacity of  
fasteners**

Panneaux à base de bois - Détermination de la capacité à  
l'arrachement d'éléments de fixation

Holzwerkstoffe - Bestimmung des Haltevermögens von  
Verbindungsmitteln

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This European Standard exists 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 Management Centre has the same status as the official versions.

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## **Foreword**

This document EN 13446:2002 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of an identical text or by endorsement, at the latest by November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

The standard is partly based EN 1382.

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

## EN 13446:2002 (E)

### 1 Scope

This European Standard specifies a test method for determining the withdrawal capacity of nails, screws and staples inserted into wood-based panels.

This test method can be used for any combination of fastener type and wood-based panel product.

NOTE This method differs from EN 320 which characterises fibreboards in terms of their resistance to the withdrawal load of only a single type of screw.

### 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 (including amendments).

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

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

EN 1381, *Timber structures — Test methods — Load bearing stapled joints*.

EN 10230-1, *Steel wire nails — Part 1: Loose nails for general applications*.

### 3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 1381 relating to staples and those given in EN 10230-1 relating to nails and the following apply.

#### 3.1

##### **withdrawal capacity**

parameter measuring the resistance to withdrawal of fasteners from wood-based panels

### 4 Symbols

#### 4.1 Fastener characteristic

$d$  nominal diameter of fastener, in millimetres

for square nails  $d$  is the side dimension

for round nails  $d$  is the diameter

for grooved and ring shank nails  $d$  is the smallest projected diameter

for screws  $d$  is the diameter given by the manufacturer

for staples  $d$  is the smallest dimension of the cross-section

$a$  staple width, in millimetres.

#### 4.2 Test characteristics

$l$  length of test piece, in millimetres

$h$  height of test piece, in millimetres

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