EESTI STANDARD EVS-EN 1075:2000

Timber structures - Test methods - Joints made with punched metal plate fasteners

EESTI STANDARDIKESKUS

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1075:2000 sisaldab Euroopa standardi EN 1075:1999 ingliskeelset teksti.	This Estonian standard EVS-EN 1075:2000 consists of the English text of the European standard EN 1075:1999.
Standard on kinnitatud Eesti Standardikeskuse 18.02.2000 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 18.02.2000 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

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English version

Timber structures - Test methods - Joints made with punched metal plate fasteners

Structures en bois - Méthodes d'essai - Assemblages réalisés avec des connecteurs métalliques à plaque emboutie

Holzbauwerke - Prüfverfahren - Verbindungen mit Nagelplatten

This European Standard was approved by CEN on 21 August 1999.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

Contents:

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 124 "Timber structures", the secretariat of which is held by DS.

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 March 2000, and conflicting national standards shall be withdrawn at the latest by March 2000.

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

This Standard is one of a series of standards for test methods for building materials and components. It was prepared by a working group under the convenorship of National Standards Authority of Ireland, (NSAI).

The standard includes a normative annex giving a method for the testing of nail root in alternate bending and three informative annexes dealing respectively with 1) the derivation of the rotational stiffness of the contact surface of the fastener and timber; 2) examples of properly located transducers and 3) examples of loading arrangement for fastener shear capacity determination.

1 Scope

This European Standard specifies the test methods for determining the strength capacity and stiffness of joints made with punched metal plate fasteners in load bearing timber structures, being used to join two or more pieces of timber of the same thickness in the same plane. The properties measured are

- load-slip characteristics and maximum load resulting from the lateral resistance of the embedded projections, at various angles between the direction of the applied force and

  the axis of the fastener (load-fastener angle α)

  the direction of the grain of the timber (load-grain angle β)

- the tension capacity of the fastener at various angles α

- the compression capacity of the fastener at various angles α

- the shear capacity of the fastener at various angles α.

A nail root test method is shown in Annex A.

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 336 Structural timber - Coniferous and poplar - Sizes, permissible deviations

EN 26891 Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics

EN 28970 Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density.

3 Definitions

For the purposes of this standard, the following definitions apply.

3.1 punched metal plate fastener: Fastener made of metal plate of nominal thickness not less than 0,9 mm and not more than 2,5 mm, having integral projections punched out in one direction and bent perpendicular to the base of the metal plate.

3.2 major axis of fastener: Direction giving the highest tension capacity per unit width of the fastener. (In many cases the punching pattern of the fastener gives rise to two main directions, perpendicular to each other, with different capacity properties).

3.3 effective area of fastener: The contact area of fastener and timber member reduced by 5 mm from the edges and by 10 mm in the grain direction from the end of the timber member, see figure 1.

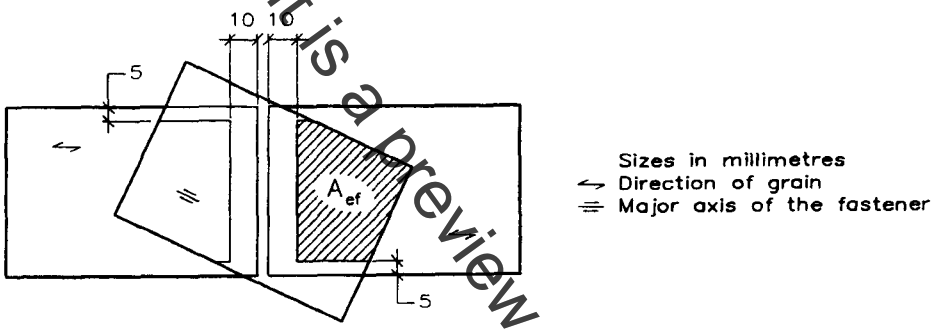

Figure 1: Definition of effective area of fastener

3.4 anchorage capacity per unit area: The maximum load resisted by the joint per effective unit area of the fastener.

3.5 characteristic density: the population 5-percentile value with the mass and volume corresponding to equilibrium moisture content at a temperature of 20 °C and a relative humidity of 65 %.

3.6 design core thickness of fastener: nominal thickness of the fastener, reduced by the thickness of the coating and further reduced by the minus tolerance of the core thickness.

4 Symbols

A_{ef}	effective area of fastener, in square millimetres
b	width of fastener perpendicular to the major axis of the fastener, in millimetres
$f_{a,\alpha,\beta}$	fastener anchorage capacity, in newtons per square millimetre
$f_{c,\alpha}$	fastener compression capacity, in newtons per millimetre