Timber structures - Test methods - Cyclic testing of joints made with mechanical fasteners

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 12512:2002 sisaldab Euroopa standardi EN 12512:2001 ingliskeelset teksti. Käesolev dokument on jõustatud 16.05.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12512:2002 consists of the English text of the European standard EN 12512:2001. This document is endorsed on 16.05.2002 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This standard specifies a test method for determining the ductility, impairment of strength and energy dissipation properties of joints made with mechanical fasteners under cyclic loading.	**Scope:** This standard specifies a test method for determining the ductility, impairment of strength and energy dissipation properties of joints made with mechanical fasteners under cyclic loading.

ICS 21.060.01, 91.080.20

Võtmesõnad: buildings, cyclic, definition, definitions, determination, dimensions, ductility, fasteners, joints, locking and locating devices, mechanical linkages, properties, strength of materials, stress, test cycles, testing, timber structures, wood

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English version

Timber structures - Test methods - Cyclic testing of joints made with mechanical fasteners

Structures en bois - Méthodes d'essai - Essais cycliques d'assemblages réalisés par organes mécaniques

Holzbauwerke - Prüfverfahren - Zyklische Prüfungen von Anschlüssen mit mechanischen Verbindungsmitteln

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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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of an identical text or by endorsement, at the latest by May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

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.

Introduction

Developments in the field of load-bearing engineered timber structures in seismic regions require that joints made with mechanical fasteners be tested to obtain information about their ductility, dissipation of energy and impairment of strength under cyclic loading.

This standard lays down general principles, which should be followed in order to achieve comparability of results from investigations carried out in different laboratories.

For different purposes two different testing procedures are considered: a general one, when the determination of the complete cyclic load-slip performance is required (complete procedure), and a particular one when only the determination of the main performances at a pre-determined ductility level is required (short procedure).

1 Scope

This European Standard specifies a test method for determining the ductility, impairment of strength and energy dissipation properties of joints made with mechanical fasteners under cyclic loading.

NOTE This standard is written, for uniformity, in terms of direct axial loads and their effects only. The standard is, however, also appropriate to the determination of the moment resisting properties of joints.

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 26891, *Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics (ISO 6891:1983).*

3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions apply:

3.1
cyclic load
alternative load in compression and tension

3.2
maximum load
maximum joint load reached during test, F_{max}, see Figure 2

3.3
yield load
load corresponding to the entry into the plastic range. When the load-slip curve presents two well-defined linear parts, the yield values are determined by the intersection between these two lines (see Figure 1 a)). When the load-slip curve does not present two well defined linear parts, the yield values are determined by the intersection of the following two lines: the first line will be determined as that drawn through the point on the load slip curve corresponding to 0,1 F_{max} and the point on the load-slip curve corresponding to 0,4 F_{max}*;* the second line is the tangent having an inclination of 1/6 of the first line (see Figure 1 b))

3.4
ultimate load
joint load corresponding to

a) failure; or

b) 80 % of the maximum load for a slip of less than 30 mm; or

c) a joint slip of 30 mm whichever occurs first in the test, see Figure 2