



SLOVENSKI STANDARD

SIST EN 1383:2016

01-april-2016

Nadomešča:
SIST EN 1383:2000

Lesene konstrukcije - Metode preskušanja - Izvlečna odpornost veznih sredstev za les pri preboju

Timber structures - Test methods - Pull through resistance of timber fasteners

Holzbauwerke - Prüfverfahren - Prüfung von Holzverbindungsmitteln auf Kopfdurchziehen

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Structures en bois - Méthodes d'essais - Résistance à la traversée de la tête d'éléments de fixation à travers le bois

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Ta slovenski standard je istoveten z: EN 1383:2016

ICS:

91.080.20 Lesene konstrukcije Timber structures

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EUROPEAN STANDARD

EN 1383

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 2016

ICS 91.080.20

Supersedes EN 1383:1999

English Version

Timber structures - Test methods - Pull through resistance of timber fasteners

Structures en bois - Méthodes d'essais - Résistance à la
traversée de la tête d'éléments de fixation à travers le
bois

Holzbauwerke - Prüfverfahren - Prüfung von
Holzverbindungsmitteln auf Kopfdurchziehen

This European Standard was approved by CEN on 19 December 2015.

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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

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Contents		Page
European foreword.....		3
1	Scope.....	4
2	Normative references.....	4
3	Terms and definitions	4
4	Symbols and abbreviations	5
5	Materials.....	7
5.1	Timber and wood-based products.....	7
5.2	Fasteners.....	7
6	Test methods	7
6.1	General.....	7
6.2	Conditioning.....	7
6.3	Fabrication of test pieces	7
6.4	Apparatus.....	7
6.5	Test procedure	7
6.6	Test results.....	10
6.7	Test report.....	10
Bibliography.....		11

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European foreword

This document (EN 1383:2016) has been prepared by Technical Committee CEN/TC 124 “Timber Structures”, the secretariat of which is held by AFNOR.

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 August 2016, and conflicting national standards shall be withdrawn at the latest by August 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1383:1999.

Compared to EN 1383:1999, the following changes have been made:

- replacement of EN 28970 by EN ISO 8970;
- improvement to figures and definitions.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 1383:2016 (E)**1 Scope**

This European Standard specifies the test method for determining the resistance of timber to the head pull through of timber fasteners.

In this standard 'timber' includes solid timber, glued laminated timber and wood-based products.

The test method applies to all types of nails, screws and staples excluding screws with fully threaded shank.

2 Normative references

The following documents, in whole or in parts, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 322, *Wood-based panels - Determination of moisture content*

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

EN 14592, *Timber structures – Dowel-type fasteners – Requirements*

EN 26891:1991, *Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics (ISO 6891:1983)*

EN ISO 8970:2010, *Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density (ISO 8970:2010)*

ISO 13061-1, *Physical and mechanical properties of wood — Test methods for small clear wood specimens — Part 1: Determination of moisture content for physical and mechanical tests*

ISO 13061-2, *Physical and mechanical properties of wood — Test methods for small clear wood specimens — Part 2: Determination of density for physical and mechanical tests*

3 Terms and definitions

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

3.1**staple**

double-bent, u-shaped piece of round, square, rectangular or oval wire with pointed legs

3.2**staple crown**

connection between the two staple legs

3.3**staple leg diameter**

nominal diameter of a round staple leg, the side length of a rectangular leg, or the diameter of an oval cross section as defined in EN 14592

3.4**staple length**

length of each staple leg, including point

3.5**staple crown width**

width across the staple legs

3.6**head pull through parameter**

parameter measuring the resistance of a timber test piece to the pulling through of the head of a timber fastener or the crown of a staple

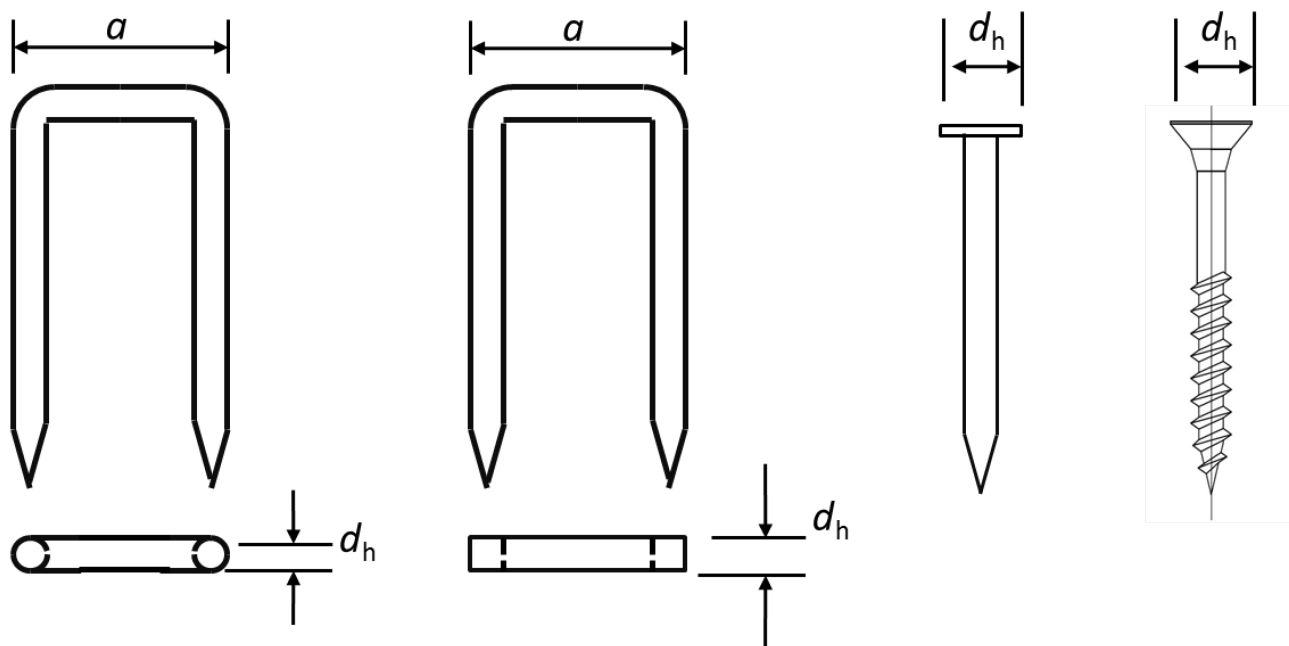
Note 1 to entry See Figures 1 and 2.

Note 2 to entry For other timber fasteners the definitions of EN 14592 apply.

4 Symbols and abbreviations

For the purposes of this document, the following symbols and abbreviations apply.

a	staple crown width, see Figure 1, in millimetres
$D_{(1,2)}$	dimensions of hole in steel plate in millimetres
d	nominal value of the diameter of the fastener as defined in EN 14592, in millimetres
d_h	effective diameter of fastener head (for nails or screws), or, see Figure 1, width of staple crown, in millimetres. For a non-circular head d_h is the diameter of a circle with an area equal to that of the head
F_{\max}	maximum pull through load, in newtons
f_{head}	pull through parameter, in newtons per square millimetres
t	timber thickness, in millimetres
α_{crn}	angle between the direction of a staple crown and the grain direction or the main direction of the wood based products, respectively, see Figure 2, in degrees



Key

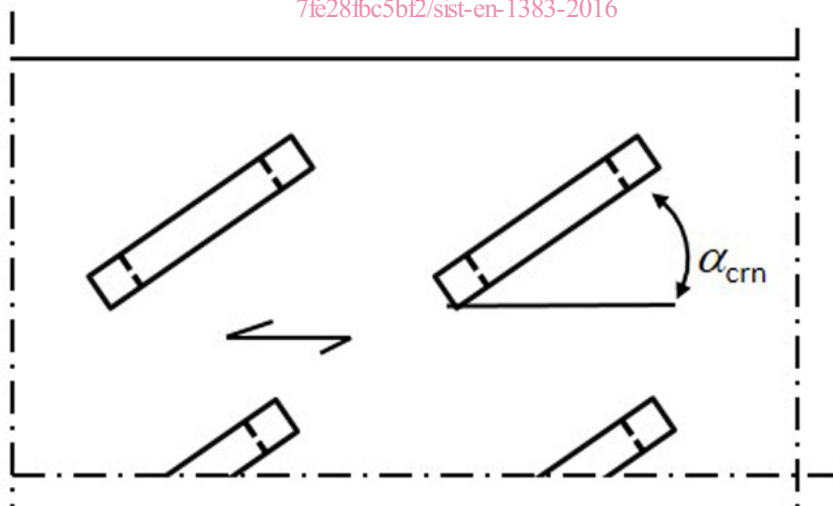
- d_h is head diameter
- a is staple crown width

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Figure 1 — Staple, screw and nail dimensions

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Key

- 1 is the fibre direction

Figure 2 — Angle between the staple direction and the grain direction or the main direction

5 Materials

5.1 Timber and wood-based products

The solid timber shall be selected in accordance with the method given in EN ISO 8970:2010.

The specification of the LVL, glued laminated timber and wood-based products shall be established. The products used for the individual test pieces shall be representative of the class or range of product to which they belong and the relevant properties shall be declared.

5.2 Fasteners

The specification of nails, screws or staples shall be established.

6 Test methods

6.1 General

The moisture content and density of the timber or wood-based products at test shall be determined as specified in ISO 13061-1, ISO 13061-2, EN 322 and EN 323 as appropriate.

6.2 Conditioning

The test pieces shall be manufactured with the timber or wood based products at an equilibrium moisture content corresponding to (20 ± 2) °C and (65 ± 5) % relative humidity. The material is conditioned when it attains constant mass. Constant mass is considered to be attained when the results of two successive weightings, carried out at an interval of 6 h, do not differ by more than 0, 1 % off the mass of the material.

For certain investigations other moisture conditioning can be appropriate, and shall be reported.

6.3 Fabrication of test pieces

The axis of the fastener shall be perpendicular to the surface, see Figure 3. The insertion of fasteners shall follow normal preparation (e.g. pre-boring) and practice. The test piece size shall be as given in Table 1. Where the test pieces are of solid timber, half of the fasteners shall be inserted radially to the growth rings and half tangentially to the growth rings.

Test shall be made with test pieces with $\alpha_{crn} = 30^\circ$. If wood-based products are included in the test piece the test shall be carried out at either $\alpha_{crn} = 30^\circ$ or $\alpha_{crn} = 60^\circ$, whichever gives the smallest load carrying capacity.

Table 1 — Test pieces

Test piece material	Test piece size (minimum)
Solid timber	$4 t \times 4 t$ Where $t \leq 7 d$
Wood based products	$4 t \times 4 t$ Where $t = \text{panel thickness as produced}$

6.4 Apparatus

The pieces shall be tested in an apparatus as shown in Figure 4.

6.5 Test procedure

The apparatus used shall be as required in Clause 7 of EN 26891:1991. The test piece shall be placed in a device ensuring the application of the pull through force along the axis of the fastener.