



SLOVENSKI STANDARD

SIST EN 1383:2000

01-april-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 Holzverbindungsmittein auf Kopfdurchziehen

Structures en bois - Méthodes d'essai - Résistance a la traversée de la tete d'éléments de fixation a travers le bois

iTeh STANDARD PREVIEW

(standards.iteh.ai)

SIST EN 1383:2000

Ta slovenski standard je istoveten z: **EN 1383:1999**

<https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a00753341d1/sist-en-1383-2000>

ICS:

91.080.20 Lesene konstrukcije Timber structures

SIST EN 1383:2000 en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 1383:2000

<https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000>

EUROPEAN STANDARD

EN 1383

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 1999

ICS 91.080.20

English version

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

Structures en bois - Méthodes d'essai - 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 11 July 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.

[SIST EN 1383:2000](https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000)

<https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000>



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

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

Contents	Page
Foreword.....	3
1 Scope.....	4
2 Normative references.....	4
3 Definitions.....	4
4 Symbols.....	5
5 Materials.....	5
5.1 Timber.....	5
5.2 Fasteners.....	5
6 Test methods.....	6
6.1 General.....	6
6.2 Conditioning.....	6
6.3 Fabrication of test pieces.....	6
6.4 Apparatus.....	6
6.5 Test procedure.....	6
6.6 Test result.....	8
6.7 Test report.....	9

SIST EN 1383:2000

<https://standards.itech.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000>

ITeCh STANDARD PREVIEW
(standards.itech.ai)

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 February 2000, and conflicting national standards shall be withdrawn at the latest by February 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 is based on part of ISO/DIS 9708 'Timber structures - Joints with mechanical fasteners - Testing of joints with nails or staples'.

iTeh STANDARD PREVIEW (standards.iteh.ai)

SIST EN 1383:2000

<https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000>

1 Scope

This 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.

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 322	Wood-based panels - Determination of moisture content
EN 323	Wood-based panels - Determination of density
EN 1381	Timber structures - Test methods - Load bearing stapled joints
EN 26891	Timber structures - Joints made with mechanical fasteners - General principles for the determination of strength and deformation characteristics (ISO 6891:1983) SIST EN 1383:2000
EN 28970	Timber structures - Testing of joints made with mechanical fasteners - Requirements for wood density (ISO 8970:1989)
ISO 3130	Wood - Determination of moisture content for physical and mechanical tests
ISO 3131	Wood - Determination of density for physical and mechanical tests

3 Definitions

For the purposes of this standard, the following 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: Diameter of a round staple leg or the smaller dimension of a rectangular or oval staple leg

3.4 staple length: Length of each staple leg, including point

3.5 staple width: Width across the staple legs, see figure 1

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.

4 Symbols

a	staple width, see figure 1, in millimetres
$D_{(1,2)}$	dimensions of hole in steel plate in millimetres
d	nominal diameter of fastener, see figure 1, in millimetres
d_h	diameter of fastener head (for nails or screws), or, see figure 1, width of staple crown, in millimetres
F_{\max}	maximum pull through load, in newtons
f	pull through parameter, in newtons per square millimetre
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

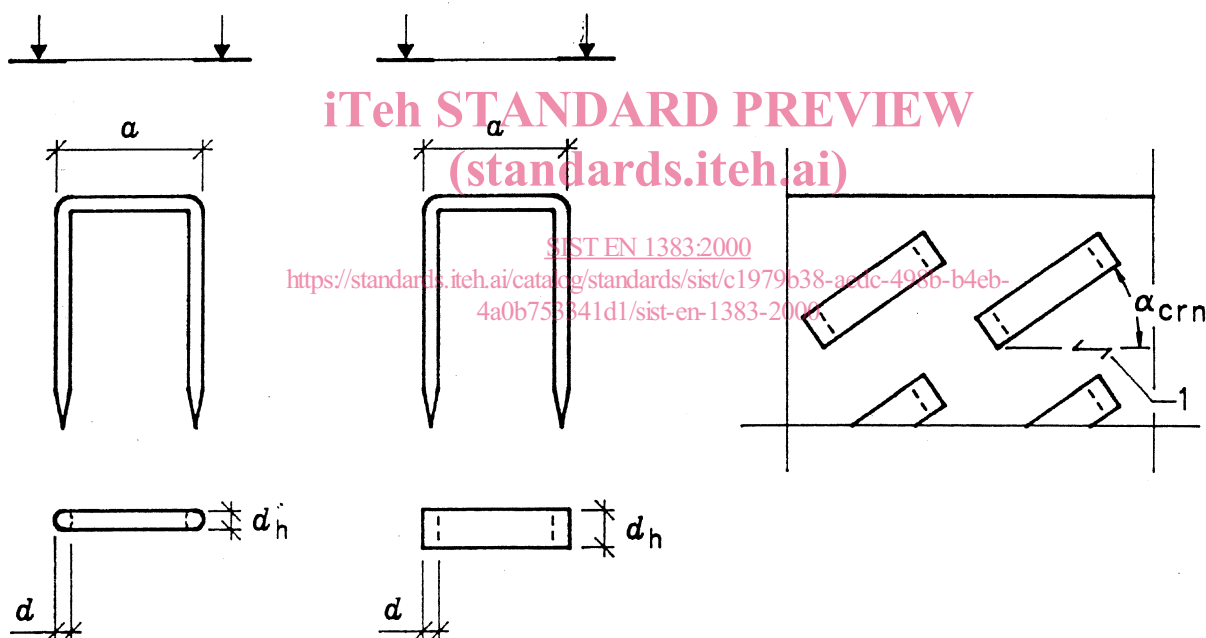


Figure 1: Staple dimensions

Figure 2: Angle between the staple direction and the grain direction or the main direction (1)

5 Materials

5.1 Timber

The timber (solid timber or glued laminated timber) shall be selected in accordance with either of the methods given in EN 28970. The specification of other wood based products shall be established.

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 3130, ISO 3131, 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 $(20 \pm 2) ^\circ\text{C}$ and $(65 \pm 5) \%$ relative humidity. The material is conditioned when it attains constant mass. Constant mass is considered to be attained when the results of two successive weighings, carried out at an interval of 6 h, do not differ by more than 0,1 % of 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. preboring) 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. For staples, half of the tests shall be carried out with $\alpha_{\text{crn}} = 0^\circ$ and the other half with $\alpha_{\text{crn}} = 90^\circ$.

NOTE: This means that where staples are tested in test pieces of solid timber, the total number of test pieces should be quartered, each quarter of the test pieces being as follows:

- Staple inserted radially to growth rings and $\alpha_{\text{crn}} = 0^\circ$;
- Staple inserted radially to growth rings and $\alpha_{\text{crn}} = 90^\circ$;
- Staple inserted tangentially to growth rings and $\alpha_{\text{crn}} = 0^\circ$;
- Staple inserted tangentially to growth rings and $\alpha_{\text{crn}} = 90^\circ$.

Table 1: Test pieces

<i>Test piece material</i>	<i>Test piece size (minimum)</i>
Solid timber	$4 t \times 4 t$ where $t \leq 7 d$
Wood based products	$4 t \times 4 t$ where $t =$ panel thickness as produced

6.4 Apparatus

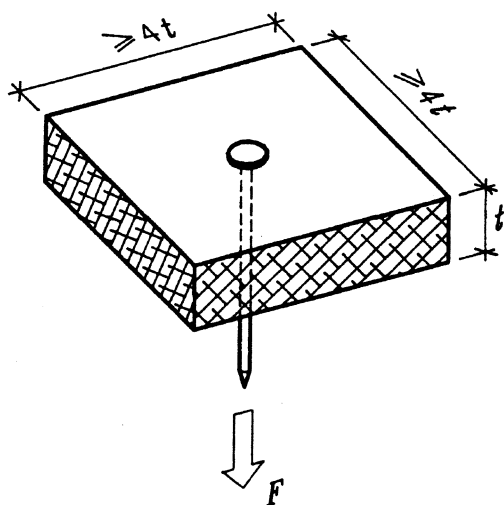
The pieces shall be tested in an apparatus as shown in figure 4.

6.5 Test procedure

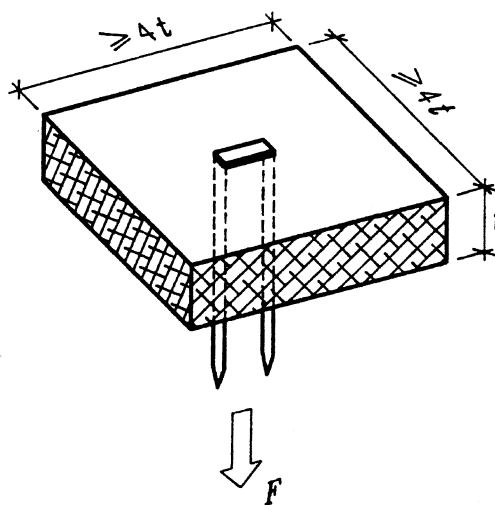
The apparatus used shall be as required in clause 7 of EN 26891:1991. The test piece shall be placed in a device ensuring the application of the pull through force along the axis of the fastener.

Pull the fastener through the test piece material with a continuous movement of the head of the testing machine. The rate of movement shall be such that the time taken to reach F_{\max} is $300 \text{ s} \pm 120 \text{ s}$. Determine F_{\max} to an accuracy of 1%.

a)



b)



- a) Nails or screws
- b) Staples

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Figure 3: Test specimens for pull through testing

SIST EN 1383:2000

<https://standards.iteh.ai/catalog/standards/sist/c1979b38-aedc-498b-b4eb-4a0b753341d1/sist-en-1383-2000>