



SLOVENSKI STANDARD

SIST EN 205:2016

01-oktober-2016

Nadomešča:
SIST EN 205:2003

Lepila - Lepila za les za nekonstrukcijsko uporabo - Ugotavljanje natezno-strižne trdnosti spojev s preklopom

Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints

Klebstoffe - Holzklebstoffe für nicht tragende Anwendungen - Bestimmung der Klebfestigkeit von Längsklebung im Zugversuch

Adhésifs - Colles pour bois à usages non structureaux - Détermination de la résistance au cisaillement en traction des joints à recouvrement

Ta slovenski standard je istoveten z: EN 205:2016

ICS:

83.180 Lepila Adhesives

SIST EN 205:2016 **en,fr,de**

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EUROPEAN STANDARD

EN 205

NORME EUROPÉENNE

EUROPÄISCHE NORM

August 2016

ICS 83.180

Supersedes EN 205:2003

English Version

Adhesives - Wood adhesives for non-structural applications - Determination of tensile shear strength of lap joints

Adhésifs - Colles pour bois à usages non structuraux -
Détermination de la résistance au cisaillement en
traction des joints à recouvrement

Klebstoffe - Holzklebstoffe für nicht tragende
Anwendungen - Bestimmung der Klebfestigkeit von
Längsklebung im Zugversuch

This European Standard was approved by CEN on 8 July 2016.

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.

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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 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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European foreword

This document (EN 205:2016) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

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 2017, and conflicting national standards shall be withdrawn at the latest by February 2017.

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

This document supersedes EN 205:2003.

Compared to EN 205:2003 the following modifications have been made:

- a) assessment of the strength based on thick bond lines deleted;
- b) processing conditions for adhesive application specified in 6.1 if no manufacturer's instructions are available;
- c) number of test pieces modified in 6.3;
- d) test results of all 20 test pieces to be given in the test report.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

Introduction

European Standards giving a common classification with respect to durability classes for wood adhesives will allow considerable improvement in consumer protection in any future product liability system with regard to properties guaranteed by the adhesive manufacturer.

The methods described in this standard are suitable for the following and other applications:

- assessing the usability and quality of adhesives for wood and derived timber products;
- classifying these adhesives into the durability classes D1 to D4 of EN 204 (thermoplastic adhesives) and C1 to C4 of EN 12765 (thermosetting adhesives);
- assessing effects on the bond strength resulting from the bonding conditions chosen, the various conditioning sequences and the treatment of the test pieces before and after bonding.

SAFETY STATEMENT — Persons using this document should be familiar with the normal laboratory practice, if applicable. This document does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user to establish appropriate safety and health practices and to ensure compliance with any regulatory conditions.

ENVIRONMENTAL STATEMENT — It is understood that some of the material permitted in this standard may have negative environmental impact. As technological advantages lead to acceptable alternatives for these materials, they will be eliminated from this standard to the extent possible.

At the end of the test, it is essential that the user of the standard take care to carry out an appropriate disposal of the wastes, according to local regulation

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1 Scope

This European Standard specifies tests for adhesives for wood and derived timber products for the assessment of their resistance to hot and cold water. It can be used for the assessment of the strength of bonds with a thin bond-line. It does not apply to adhesives for structural use or to the manufacture of particleboards, fibreboards and plywood. It does not replace tests on finished products.

2 Normative references

The following documents, in whole or in part, 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 204, *Classification of thermoplastic wood adhesives for non-structural applications*

EN 923, *Adhesives - Terms and definitions*

EN 12765, *Classification of thermosetting wood adhesives for non-structural applications*

ISO 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

ISO 6344-2:1998, *Coated abrasives — Grain size analysis — Part 2: Determination of grain size distribution of macrogrits P12 to P220*

3 Terms and definitions (standards.iteh.ai)

For the purposes of this document, the terms and definitions given in EN 923 and the following apply.

3.1

thin bond line

close contact adhesive joint where the adhesive layer is nominally 0,1 mm thick

4 Principle

A symmetrical bonded single lap joint between two symmetrical wooden adherends is subjected to specified conditioning treatments and strained to rupture by a tensile force parallel to the grain.

5 Apparatus

The testing machine shall be a constant-rate-of-traverse machine as described in ISO 5893. If a constant-rate-of-traverse machine is not available, a constant-rate-of-loading machine shall be used causing a rupture within the time limits specified in 6.5.

The jaws shall grip the test pieces with a wedge action and permit self-alignment while the test pieces are being pulled.

6 Procedure

6.1 Preparation of bonded assemblies

Prepare two panels (see Figure 1) from a thick unsteamed, conditioned, straight-grained board of beech (*Fagus sylvatica* L.) with a nominal density of (700 ± 50) kg/m³ with a moisture content of (12 ± 1) %.

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It is permissible to prepare panels from different boards unless it is essential to minimize differences in the wood in order to conduct special comparative tests.

Ensure that the angle between the growth rings and the surface to be bonded is between 30° and 90°.

Cut the panels across the direction of the grain to a length equal to a multiple of 300 mm with the necessary allowance for cross-cutting and along the grain to a width of approximately 130 mm making an allowance for the width of cut as shown in Figure 1.

For tests use two panels of $(5,0 \pm 0,1)$ mm thickness.

For conventional tests, condition the panels at a temperature of either (20 ± 2) °C and (65 ± 5) % relative humidity or (23 ± 2) °C and (50 ± 5) % relative humidity subsequently referred to as the standard atmosphere (20/65) or (23/50) for a minimum of 7 days.

Prepare bonded assemblies using thin (approximately 0,1 mm) bond-lines. Not more than 24 h before bonding, either lightly plane or lightly sand each surface to be bonded (using an abrasive paper of grain size P100 complying with ISO 6344-2:1998 is recommended). Remove any dust carefully. Do not touch or soil the prepared surfaces.

Comply with the adhesive manufacturer's instructions regarding the processing conditions, including the preparation of the adhesive, the amount of adhesive to be applied, whether the adhesive is to be applied on one or both surfaces, the open and closed assembly time and the magnitude and duration of the assembly pressure and report them in the test report.

Where no manufacturer's instructions are available the following processing conditions shall be used:

- adhesive applied on both sides;
- adhesive spread: (150 ± 10) g/m²;
- open assembly time: (120 ± 10) s;
- closed assembly time (180 ± 10) s;
- pressing pressure $(0,7 \pm 0,1)$ N/mm²;
- pressing time: 2 h;

Bond the two 5 mm thick panels as shown in Figure 1 with the pressure uniformly distributed over the bonded surface.

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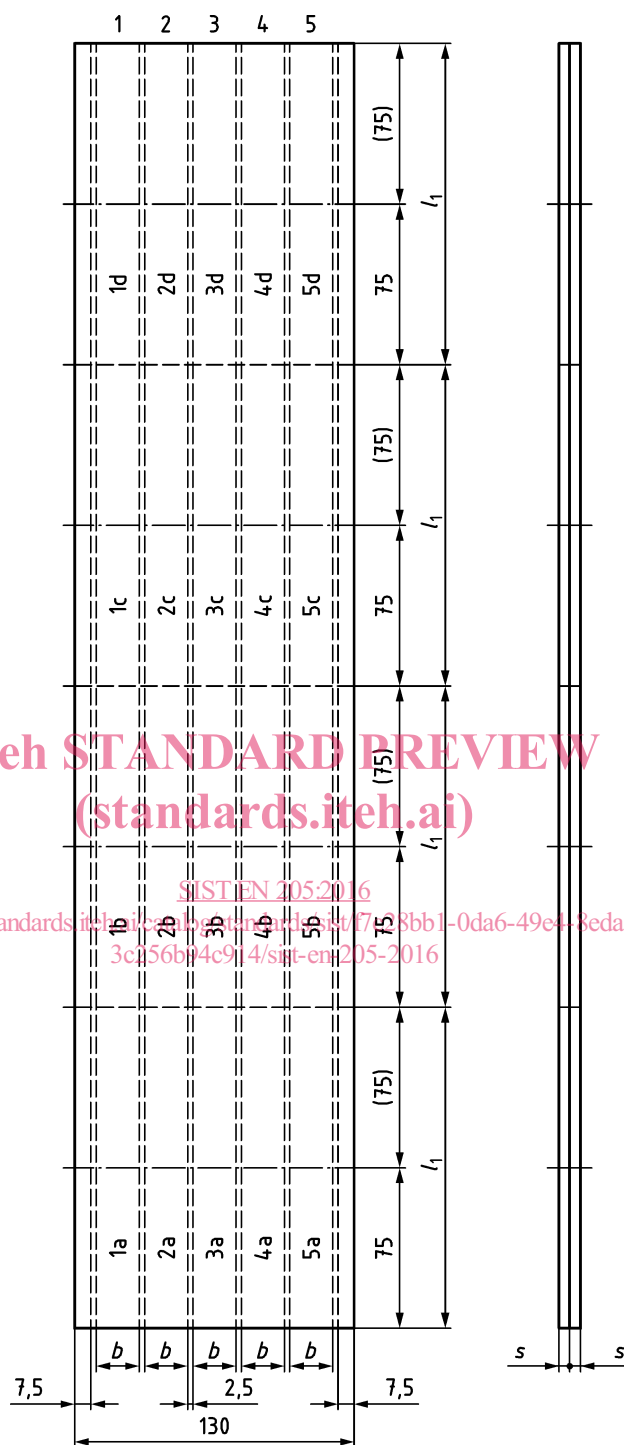
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Dimensions in millimetres

**Key**

- l_1 (150 ± 5) mm: length of test piece
- b $(20,0 \pm 0,2)$ mm: width of test piece
- s $(5,0 \pm 0,1)$ mm: thickness of the panels

Figure 1 — Example of a bonded panel marked for division into individual test pieces using 2,5 mm saw cuts