



# SLOVENSKI STANDARD SIST EN 302-8:2023

01-julij-2023

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**Lepila za nosilne lesene konstrukcije - Preskusne metode - 8. del: Preskus statične obremenitve preskušancev z več lepljenimi spoji pri tlačni strižni obremenitvi**

Adhesives for load-bearing timber structures - Test methods - Part 8: Static load test of multiple bond line specimens in compression shear

Klebstoffe für tragende Holzbauteile - Prüfverfahren - Teil 8: Statische Belastungsprüfung an Prüfkörpern mit mehreren Klebfugen bei Druck-Scherbeanspruchung

Adhésifs pour structures portantes en bois - Méthodes d'essai - Partie 8 : Essai de charge statique d'éprouvettes à joints de colle multiples en cisaillement par compression

**Ta slovenski standard je istoveten z: EN 302-8:2023**

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**ICS:**

83.180	Lepila	Adhesives
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EUROPEAN STANDARD

EN 302-8

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English Version

## Adhesives for load-bearing timber structures - Test methods - Part 8: Static load test of multiple bond line specimens in compression shear

Adhésifs pour structures portantes en bois - Méthodes d'essai - Partie 8 : Essai de charge statique d'éprouvettes à joints de colle multiples en cisaillement par compression

Klebstoffe für tragende Holzbauteile - Prüfverfahren - Teil 8: Statische Belastungsprüfung an Prüfkörpern mit mehreren Klebfugen bei Druck-Scherbeanspruchung

This European Standard was approved by CEN on 18 December 2022.

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

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## European foreword

This document (EN 302-8:2023) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by UNE.

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of an identical text or by endorsement, at the latest by October 2023, and conflicting national standards shall be withdrawn at the latest by October 2023.

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 302-8:2017.

The main changes compared to the previous edition are listed below:

- a) test of test pieces with bond line thickness 0,5 mm, 1 mm and 2 mm has been included in the document;
- b) Clause 8 Test report has been deleted;
- c) the Bibliography has been deleted.

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

**EN 302-8:2023 (E)****Introduction**

This document is one of a series dealing with adhesives for use with timber structures, and is published in support of the EN 1995 series, *Eurocode 5: Design of timber structures*. The series consists of five classification and performance requirements for adhesives for load-bearing timber structures, phenolic and aminoplastic adhesives (EN 301), one component polyurethane adhesives (EN 15425), emulsion polymer isocyanate adhesives (EN 16254), two component epoxy and polyurethane adhesives for glued in rods (EN 17334) and for on-site repair of cracked timber structures (EN 17418) and all together twelve test methods (EN 302-1, EN 302-2, EN 302-3, EN 302-4, EN 302-5, EN 302-6, EN 302-7, EN 302-8, EN 15416-1, EN 15416-3, EN 15416-4 and EN 15416-5).

These European Standards have the following titles:

EN 301, *Adhesives, phenolic and aminoplastic, for load-bearing timber structures — Classification and performance requirements*

EN 302, *Adhesives for load-bearing timber structures — Test methods:*

- *Part 1: Determination of longitudinal tensile shear strength*
- *Part 2: Determination of resistance to delamination*
- *Part 3: Determination of the effect of acid damage to wood fibres by temperature and humidity cycling on the transverse tensile strength*
- *Part 4: Determination of the effects of wood shrinkage on the shear strength*
- *Part 5: Determination of maximum assembly time under referenced conditions*
- *Part 6: Determination of the minimum pressing time under referenced conditions*
- *Part 7: Determination of the working life under referenced conditions*
- *Part 8: Static load test of multiple bond line specimens in compression shear*

EN 15416, *Adhesives for load bearing timber structures other than phenolic and aminoplastic — Test methods:*

- *Part 1: Long-term tension load test perpendicular to the bond line at varying climate conditions with specimens perpendicular to the glue line (Glass house test)*
- *Part 3: Creep deformation test at cyclic climate conditions with specimens loaded in bending shear*
- *Part 4: Determination of open assembly time under referenced conditions*
- *Part 5: Determination of minimum pressing time under referenced conditions*

EN 15425, *Adhesives — One component polyurethane (PUR) for load-bearing timber structures — Classification and performance requirements*

EN 16254, *Adhesives — Emulsion polymer isocyanate (EPI) for load-bearing timber structures — Classification and performance requirements*

EN 17334, *Glued-in rods in glued structural timber products — Testing, requirements and bond shear strength classification*

EN 17418, *Two-component epoxy and polyurethane adhesives for on-site repair of cracked timber structures — Testing, requirements and repair strength verification*

#### **Safety statement**

Persons using this document should be familiar with the normal laboratory practice, if applicable. This document cannot 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 document may have negative environmental impact. As technological advantages lead to better alternatives for these materials, they will be eliminated from this document to the extent possible.

At the end of the test, it is recommended that the users of this document take care to carry out an appropriate disposal of the wastes, according to local regulation.

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**EN 302-8:2023 (E)****1 Scope**

This document specifies a method of determining the ability of adhesive bonds to resist static load. It is applicable to adhesives used in load bearing timber structures.

It is applicable for the following applications:

- a) for assessing the compliance of adhesives according to EN 301, EN 15425, EN 16254, EN 17334 and EN 17418;
- b) for assessing the suitability and quality of adhesives for load-bearing timber structures;
- c) for assessing the effect on the bond strength resulting from constant load at different climate conditions.

This method is intended primarily to obtain performance data for the classification of adhesives for load bearing timber structures according to their suitability for use in defined climatic environments.

This method is not intended to provide data for structural design and does not necessarily represent the performance of the bonded member in service.

**2 Normative references**

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 301, *Adhesives, phenolic and aminoplastic, for load-bearing timber structures - Classification and performance requirements*

EN 384:2016+A2:2022, *Structural timber - Determination of characteristic values of mechanical properties and density*

EN 923, *Adhesives - Terms and definitions*

EN 15425, *Adhesives - One component polyurethane (PUR) for load-bearing timber structures - Classification and performance requirements*

EN 16254, *Adhesives - Emulsion polymerized isocyanate (EPI) for load-bearing timber structures - Classification and performance requirements*

EN 17334, *Glued-in rods in glued structural timber products - Testing, requirements and bond shear strength classification*

EN 17418, *Two-component epoxy and polyurethane adhesives for on-site repair of cracked timber structures - Testing, requirements and repair strength verification*



### 3 Terms and definitions

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

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

#### 3.1

##### **glue line**

adhesive layer between the wood members

#### 3.2

##### **thick glue line**

glue line of nominal thickness in the range of 0,5 mm to 2,0 mm at the time of bonding

Note 1 to entry: Thick glue lines are achieved by using spacers, grooves or similar devices when two plain members are glued together.

#### 3.3

##### **close contact glue line**

glue line of thickness maximum 0,1 mm

Note 1 to entry: Close contact glue line can be achieved by pressing together two plane wood members with a clamping pressure of  $(0,8 \pm 0,1)$  N/mm<sup>2</sup> without additional grooves, spacers or similar devices.

### 4 Principle

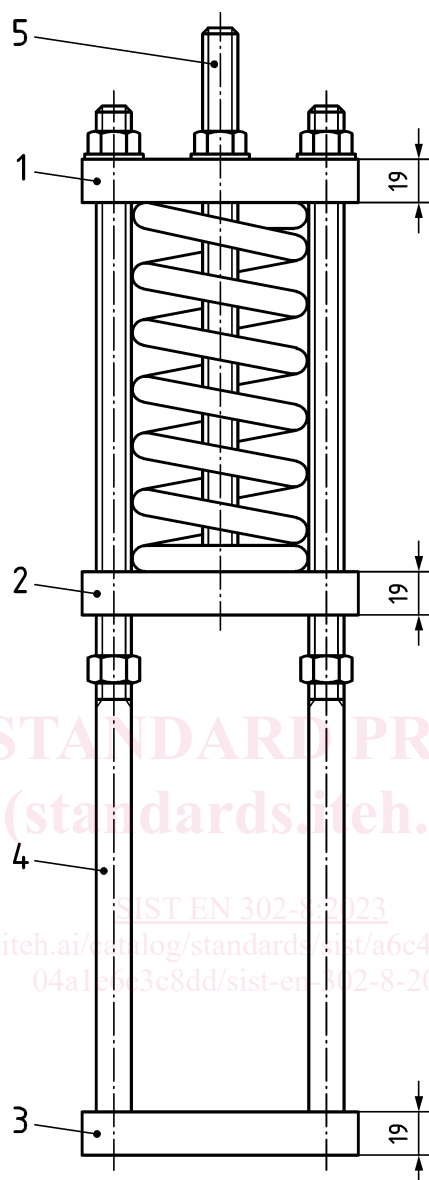
Bonded test pieces are subjected to a constant compression shear load under a series of three different climates. Number of failures and the amount of deformation is measured after the end of the last climate cycle.

### 5 Apparatus

#### 5.1 Test jig

The test equipment is shown in Figure 1 and Figure 2.

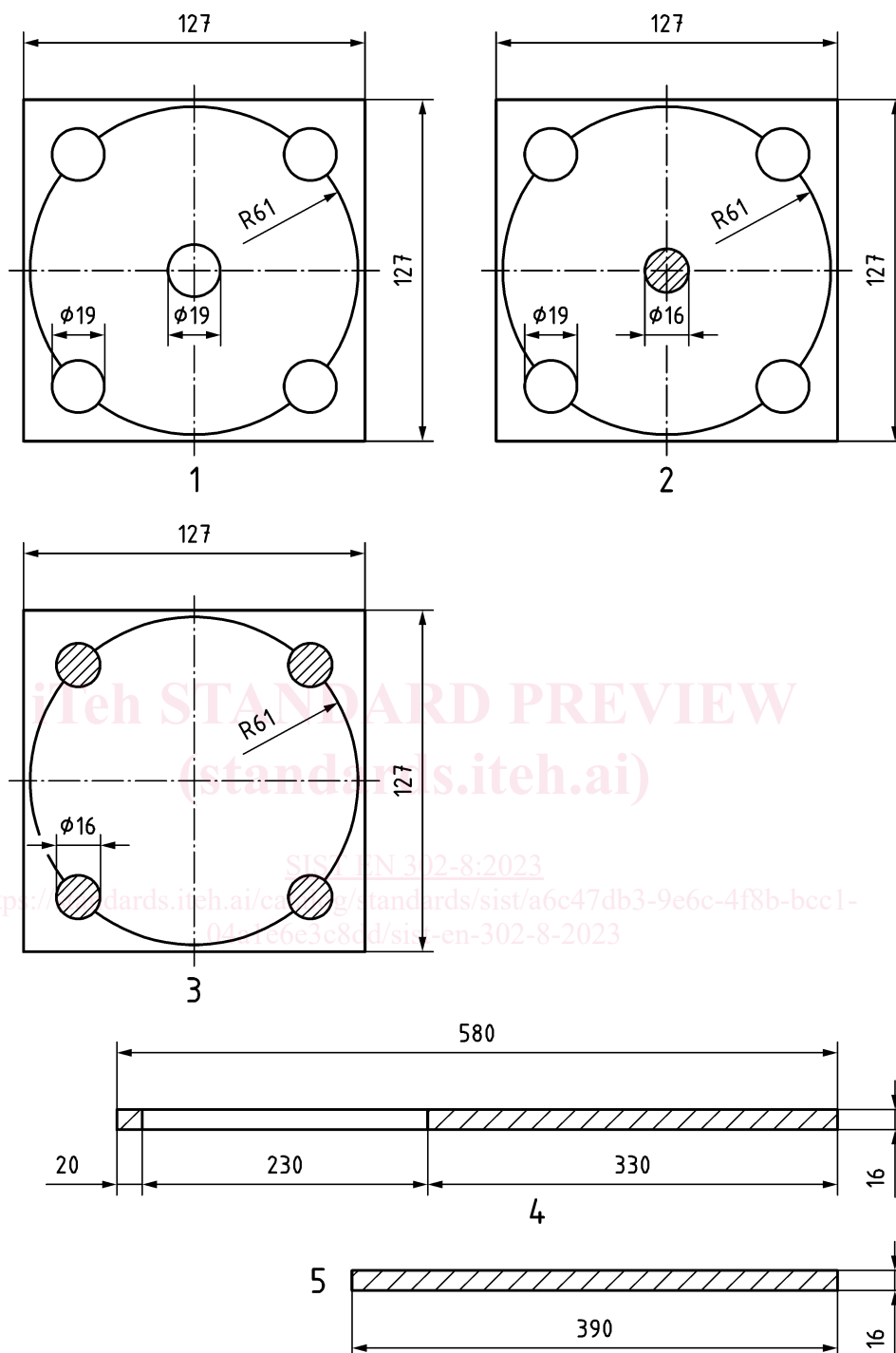
Dimensions in millimetres

**Key**

- 1 top plate
- 2 spacer plate
- 3 base plate
- 4 tension rod
- 5 centre rod

**Figure 1 — Test jig**

Dimensions in millimetres

**Key**

- |   |              |   |                                                    |
|---|--------------|---|----------------------------------------------------|
| 1 | top plate    | 4 | tension rod (the given lengths are minimum values) |
| 2 | spacer plate | 5 | centre rod (the given length is a minimum value)   |
| 3 | base plate   |   |                                                    |

**Figure 2 — Nominal dimensions of plates and rods**

If longer rods are used, distance blocks need to be placed on top and/or under the specimen. The distance blocks shall be prepared in such a way that the two contact surfaces, between the distance