



**NSAI**  
Standards

Irish Standard  
I.S. EN 302-1:2013

# Adhesives for load-bearing timber structures - Test methods - Part 1: Determination of longitudinal tensile shear strength

## I.S. EN 302-1:2013

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

The National Standards Authority of Ireland (NSAI) produces the following categories of formal documents:

I.S. xxx: Irish Standard – national specification based on the consensus of an expert panel and subject to public consultation.

S.R. xxx: Standard Recommendation - recommendation based on the consensus of an expert panel and subject to public consultation.

SWIFT xxx: A rapidly developed recommendatory document based on the consensus of the participants of an NSAI workshop.

*This document replaces:*  
EN 302-1:2004

*This document is based on:* EN 302-1:2013  
*Published:* 15 April, 2013

This document was published under the authority of the NSAI and comes into effect on:  
15 April, 2013

**ICS number:**

83.180

**NSAI**  
1 Swift Square,  
Northwood, Santry  
Dublin 9

T +353 1 807 3800  
F +353 1 807 3838  
E standards@nsai.ie  
W NSAI.ie

**Sales:**  
T +353 1 857 6730  
F +353 1 857 6729  
W standards.ie

Údarás um Chaighdeáin Náisiúnta na hÉireann

English Version

## Adhesives for load-bearing timber structures - Test methods - Part 1: Determination of longitudinal tensile shear strength

Adhésifs pour structures en bois - Méthodes d'essais -  
Partie 1: Détermination de la résistance du joint au  
cisaillement en traction longitudinale

Klebstoffe für tragende Holzbauteile - Prüfverfahren - Teil 1:  
Bestimmung der Längszugscherfestigkeit

This European Standard was approved by CEN on 5 February 2013.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

<b>Contents</b>	<b>Page</b>
Foreword.....	3
Introduction .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Symbols .....	7
5 Principle.....	7
6 Apparatus .....	7
7 Method .....	7
7.1 Preparation of panels .....	7
7.2 Preparation of the bonded assemblies.....	8
7.2.1 Wood adherends and bonding procedure .....	8
7.2.2 Close contact glue .....	9
7.2.3 Thick glue lines (gap joints) .....	9
7.3 Preparation of test pieces .....	9
7.4 Number of test pieces .....	10
7.5 Treatment prior to tensile shear testing .....	10
7.6 Test procedure .....	11
8 Expression of results .....	12
9 Test report .....	12
9.1 The adhesive .....	12
9.2 Preparation of test pieces and testing procedure.....	12
9.3 Test results.....	12
Bibliography .....	14

## Foreword

This document (EN 302-1:2013) 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 September 2013 and conflicting national standards shall be withdrawn at the latest by September 2013.

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 302-1:2004.

The following modifications have been made:

- Two new clauses (Terms and definitions and Symbols) are introduced in this revised standard;
- Thick glue line is now prepared with thicknesses between 0,3 mm and 2,0 mm depending on type of adhesive;
- There has been given more detailed instructions on how to prepare thick glue line;
- The condition period for bonded assemblies has been increased.

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.

## Introduction

This document is one of a series dealing with adhesives for use with timber structures, and is published in support of EN 1995, *Eurocode 5: Design of timber structures*. The series consists of three classification and performance requirements for adhesives for load-bearing timber structures, phenolic and aminoplastic adhesives (EN 301), one component polyurethane adhesives (EN 15425) and emulsion polymerised isocyanate adhesives (prEN 16254), together with eleven test methods (EN 302 Parts 1 to 7 and EN 15416 Parts 2 to 5).

These European Standards have the following titles:

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

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

prEN 16254, *Adhesives — Emulsion polymerized isocyanate (EPI) 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*

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

— *Part 2: Static load test of multiple bondline specimens in compression shear*

— *Part 3: Creep deformation test at cyclic climate conditions with specimens loaded in bending shear*

— *Part 4: Determination of open assembly time for one component polyurethane adhesives*

— *Part 5: Determination of conventional pressing time*

## 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 standard can have a negative environmental impact. As technological advantages lead to better alternatives for these materials, they will be eliminated from this standard to the greatest extent possible.

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

## 1 Scope

This European Standard specifies a method for determining the shear strength of adhesive bonds in close contact glue line and thick glue line.

It is suitable for the following applications:

- a) for assessing the compliance of adhesives with EN 301, EN 15425 and prEN 16254;
- b) for assessing the suitability and quality of adhesives for load-bearing timber structures.

This test 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 for use to provide for structural design, and does not necessarily represent the performance of the bonded member in service.

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

EN 923:2005+A1:2008, *Adhesives — Terms and definitions*

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

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

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 923:2005+A1:2008 and the following apply.

### 3.1 glue line

adhesive layer between the wood members

### 3.2 thick glue line

glue line of nominal thickness in the range of 0,3 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 with a thickness of 0,3 mm to 2,0 mm when two plain members are glued together.

### 3.3 close contact glue line

glue line of thickness maximum 0,1 mm



This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

- 
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
  - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-