



**NSAI**  
Standards

Irish Standard  
I.S. EN 302-5:2013

# Adhesives for load-bearing structures - Test methods - Part 5: Determination of maximum assembly time under referenced conditions

## I.S. EN 302-5:2013

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

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

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English Version

## Adhesives for load-bearing structures - Test methods - Part 5: Determination of maximum assembly time under referenced conditions

Adhésifs pour structures portantes en bois - Méthodes  
d'essai - Partie 5: Détermination du temps d'assemblage  
maximal dans des conditions de référence

Klebstoffe für tragende Holzbauteile - Prüfverfahren - Teil 5:  
Bestimmung der maximalen Wartezeit bei  
Referenzbedingungen

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.

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# Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope .....	6
2 Normative references .....	6
3 Terms and definitions .....	6
4 Principle.....	6
5 Apparatus .....	6
6 Procedure .....	7
6.1 General.....	7
6.1.1 Selection of timber.....	7
6.1.2 Preparation of the bonded members .....	7
6.1.3 Glue spread level .....	7
6.2 Screening test .....	7
6.2.1 General.....	7
6.2.2 Adhesive application .....	7
6.2.3 Lay-up .....	7
6.2.4 Pressing time .....	8
6.2.5 Conditioning.....	8
6.2.6 Procedure and evaluation of the screening test .....	8
6.3 Final test .....	8
6.3.1 General.....	8
6.3.2 Pressing time .....	8
6.3.3 Conditioning.....	8
6.4 Delamination test procedures .....	9
6.4.1 Preparation of the test pieces .....	9
6.4.2 Testing for delamination .....	9
6.5 Measurement and evaluation of delamination.....	9
7 Expression of results .....	9
8 Requirement .....	10
8.1 Screening test .....	10
8.2 Final test .....	10
9 Test report .....	10

## **Foreword**

This document (EN 302-5:2013) 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 ENV 302-5:2001.

The following modifications have been made:

- The principle for the determination of maximum assembly time has been totally altered;
- The rolling ball method has been exchanged by test pieces similar to EN 302–2.

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 adhesive (EN 15425) and emulsion polymerized isocyanate adhesive (prEN 16254) and all together 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 laboratory method of determining the maximum assembly time at two spread rate levels in standard atmosphere [20/65].

This European Standard is intended for obtaining a reliable base of comparison of the maximum assembly time between adhesives at referenced conditions.

## 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 302-2:2013, *Adhesives for load-bearing timber structures — Test methods — Part 2: Determination of resistance to delamination*

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

## 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 assembly time

time interval under specified conditions from spread of adhesive on the lamellae until the cramping pressure is applied

### 3.2 maximum assembly time

time interval after which an adhesive coat loses its bonding ability

## 4 Principle

Delamination test pieces similar to EN 302-2 are produced with different assembly times for individual bond lines by using 5 mm spacers in the corners. A delamination test is performed to evaluate the maximum assembly time at which the highest allowed delamination value is exceeded.

## 5 Apparatus

5.1 **Autoclave or similar pressure vessel**, as described in EN 302-2.

5.2 **Vacuum pump or similar device**, as described in EN 302-2.

5.3 **Pump or similar device**, as described in EN 302-2.

5.4 **Air-circulating oven(s) or chamber(s)**, as described in EN 302-2.



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