

Adhesives for load-bearing timber structures - Test methods - Part 7: Determination of the working life under referenced conditions

EESTI STANDARDI EESSÕNA

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English Version

**Adhesives for load-bearing timber structures - Test methods -
Part 7: Determination of the working life under referenced
conditions**

Adhésifs pour structures portantes en bois - Méthodes
d'essai - Partie 7 : Détermination de la durée d'utilisation
dans des conditions de référence

Klebstoffe für tragende Holzbauteile - Prüfverfahren - Teil 7:
Bestimmung der Gebrauchsdauer bei
Referenzbedingungen

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

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Foreword

This document (EN 302-7:2013) 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of an identical text or by endorsement, at the latest by September 2013, and conflicting national standards shall be withdrawn at the latest by September 2013.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 302-7:2004.

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

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 polymerised 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 method for determining the working life for adhesives mixed with hardener for load-bearing timber structures, by a viscosity test.

This method is not suitable for determining the working life of a multi-component adhesive whose actual working life is very short.

This document is only intended for obtaining a reliable basis for comparison between adhesives. The method gives results which cannot be applied to the safe manufacture of timber structures without modifications for the influences of factory temperature and relative air humidity.

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

EN ISO 2555:1999, *Plastics — Resins in the liquid state or as emulsions or dispersions — Determination of apparent viscosity by the Brookfield test method (ISO 2555:1989)*

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
working life under referenced conditions
period of time at 20 °C during which an adhesive, prepared for application, increases in apparent viscosity to 25 000 mPa s under referenced conditions

4 Principle

The viscosity of a specified volume of adhesive at 20 °C is monitored using a Brookfield type viscometer, until it reaches 25 000 mPa s.

5 Apparatus

5.1 Beaker, approximately 850 ml capacity, 90 mm to 95 mm internal diameter, 115 mm to 160 mm height with a wall thickness not exceeding 1 mm.

The beaker shall be made of a material that ensures a good heat conductivity and that does not react with the adhesive.

NOTE A stainless steel beaker is suitable for most of the commercial adhesives used for the gluing of load-bearing timber structures.

5.2 Brookfield type viscometer, type A.