



SLOVENSKI STANDARD
SIST EN 15274:2009
01-januar-2009

Lepila za splošne namene montaže v gradbeništvu - Zahteve in preskusne metode

General purpose adhesives for structural assembly - Requirements and test methods

Klebstoffe für allgemeine Anwendungen bei der Anwendung in strukturellen Fügeanordnungen - Anforderungen und Prüfverfahren

Adhésifs structuraux pour applications générales - Exigences et méthodes d'essai

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ICS:

83.180 Lepila Adhesives

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EUROPEAN STANDARD

EN 15274

NORME EUROPÉENNE

EUROPÄISCHE NORM

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English Version

General purpose adhesives for structural assembly - Requirements and test methods

Adhésifs structuraux pour applications générales -
Exigences et méthodes d'essai

Klebstoffe für allgemeine Anwendungen in strukturellen
Kleverbunden - Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 8 September 2007.

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 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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

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Contents	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	6
4 Performance characteristics for intended uses	6
5 Requirements	8
5.1 Production control requirements.....	8
5.2 Performance requirements	8
6 Sampling.....	9
7 Evaluation of conformity.....	9
7.1 General.....	9
7.2 Initial type-testing	9
7.3 Factory production control.....	9
Annex ZA (informative) Relationship between this European Standard and the Essential Requirements of EU Directive Construction Products Directive.....	10
ZA.1 Scope and relevant characteristics.....	10
ZA.2 Procedure for attestation of conformity of general purpose adhesives	11
ZA.2.1 System of attestation of conformity	11
ZA.2.2 EC Certificate and Declaration of conformity.....	12
ZA.3 CE marking and labelling.....	13
Bibliography.....	16

Foreword

This document (EN 15274:2007) 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 May 2008, and conflicting national standards shall be withdrawn at the latest by August 2009.

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.

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EN 15274:2007 (E)**1 Scope**

This European Standard specifies requirements for adhesives intended for use in the creation and general assembly of load-bearing, structural elements used in civil engineering works and the construction of buildings. Other than the exceptions stated, it embraces all combinations of bonded materials, used to create or repair load-bearing elements.

It covers individual adhesives and special purpose kits comprising various combinations of adhesive types and components.

It includes test methods and methods of assessment.

The performance requirements in this standard may not be applicable to highly specialised applications in extreme environmental conditions, e.g. cryogenic use, nor do they cover specialised circumstances such as accidental impact, e.g. due to traffic or ice, or earthquake loading where specific performance requirements will apply.

The intended use is for internal and external construction elements and those cladding and covering elements (excluding ceramic tiles) specifically required, by regulatory authorities, to provide protection from fire in identified building zones, including escape routes.

It does not cover:

- Prefabricated, bonded structural components.
- Concrete bonded either to itself or steel or a material based on carbon fibre.
- Wood, when bonded to itself to form a timber based, laminated beam [of the type known as a 'Glulam' beam] intended for use as a major structural, load bearing element.
- Thermoplastics [e.g. polyethylene, polypropylene, polyamide and fluorinated polymers in general] unless they have been specifically prepared [usually through a specialised oxidative process] for bonded assembly on site.
- Co-axial metallic assemblies comprising fasteners- threaded and otherwise, pipes and tubes.
- Glass assemblies in structural glazing applications made using silicone adhesives.
- Those structural elements that are permanently immersed in water.

2 Normative references

The following referenced documents are indispensable for the application 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 923:2005, *Adhesives - Terms and definitions*

EN 1067, *Adhesives - Examination and preparation of samples for testing*

EN 1242, *Adhesives - Determination of isocyanate content*

EN 1465, *Adhesives - Determination of tensile lap-shear strength of rigid-to-rigid bonded assemblies (ISO 4587:1979 modified)*

EN 1504-8, *Products and systems for the protection and repair of concrete structures - Definitions, requirements, quality control and evaluation of conformity - Part 8: Quality control and evaluation of conformity*

EN 1877-1, *Products and systems for the protection and repair of concrete structures - Test methods - Reactive functions related to epoxy resins - Part 1: Determination of epoxy equivalent*

EN 1877-2, *Products and systems for the protection and repair of concrete structures - Test methods - Reactive functions related to epoxy resins - Part 2: Determination of amine functions using the total basicity number*

EN 12092, *Adhesives - Determination of viscosity*

EN 13999-1, *Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 1: General procedure*

EN 13999-2, *Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 2: Determination of volatile organic compounds*

EN 13999-3, *Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 3: Determination of volatile aldehydes*

EN 13999-4, *Adhesives - Short term method for measuring the emission properties of low-solvent or solvent-free adhesives after application - Part 4: Determination of volatile diisocyanates*

EN 14022, *Structural adhesives - Determination of the pot life (working life) of multicomponent adhesives*

EN 15336, *Adhesives - Determination of the time to rupture of bonded joints under static load (ISO 15109:1998 modified)*

EN ISO 75-3, *Plastics - Determination of temperature of deflection under load - Part 3: High-strength thermosetting laminates (ISO 75-3:2004)*

EN ISO 527-2, *Plastics - Determination of tensile properties - Part 2: Test conditions for moulding and extrusion plastics (ISO 527-2:1993 including Corr 1:1994)*

EN ISO 527-3, *Plastics - Determination of tensile properties - Part 3: Test conditions for films and sheets (ISO 527-3:1995)*

EN ISO 9142, *Adhesives - Guide to the selection of standard laboratory ageing conditions for testing bonded joints (ISO 9142:2003)*

EN ISO 9664, *Adhesives - Test methods for fatigue properties of structural adhesives in tensile shear (ISO 9664:1993)*

EN ISO 11339, *Adhesives - T-peel test for flexible-to-flexible bonded assemblies (ISO 11339:2003)*

EN ISO 11909, *Binders for paints and varnishes - Polyisocyanate resins - General methods of test (ISO 11909:2007)*

EN ISO 14896, *Plastics - Polyurethane raw materials - Determination of isocyanate content (ISO 14896:2000)*

EN ISO 15605, *Adhesives - Sampling (ISO 15605:2000)*

EN 15274:2007 (E)**3 Terms and definitions**

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

NOTE CEN/TR 14548 also provides relevant guidance.

4 Performance characteristics for intended uses

The manufacturer shall undertake initial performance tests on the product in accordance with Table 1.

The measurement temperature is (23 ± 2) °C. For measurements obtained at other temperatures, record the temperature with the value.

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Table 1 — Performance characteristics for intended uses

No	Characteristic	Units	Reference Test Method	Additional information and test methods ^{a)}
1	Bond shear strength	MPa	EN 1465	Explain the used adherend material, surface treatment and thickness of adhesive layer in the technical documentation of the product, because this has an influence to the measured value.
2	Tensile strength ^{b)}	MPa	EN ISO 527-2 EN ISO 527-3	For very brittle adhesives it may be more suitable to perform flexural tests instead of tensile, e.g. the EN ISO 178.
3	Young's modulus	MPa	EN ISO 527-2 EN ISO 527-3	This is also depending from available test equipment. Especially for production control the test should be easy to perform and show reliable results.
4	Fatigue strength ^{b)}	MPa	EN ISO 9664	Shear stress determined at a specific number of fault test cycles.
5	Heat resistance	°C	EN ISO 75-3	Determination of temperature of deflection under load. Heat resistance can also be determined by means of the determination of glass transition temperature according to EN ISO 6721-2.
6	Creep ^{b)}		EN 15336	
7	Environmental durability		EN ISO 9142	Durability shall be measured by means of the change of the bond shear strength (according to EN 1465) after an ageing test according to EN ISO 9142 conditions. Manufacturer shall declare the relevant ageing conditions for the specific application.
8	Release of dangerous substances	µg/m ³	EN 13999 (all parts)	
9	Impact resistance ^{b)}	N/mm	EN ISO 11339	
10	Pot life (working life)	Minutes	EN 14022	Only suitable for two component products.
<p>^{a)} Instead of the reference test method other test methods may be more suitable, depending from the type of adhesive e.g. Therefore additional test methods are possible for factory production control provided that the producer demonstrates sufficient correlation.</p> <p>^{b)} The determination of these additional performance characteristics is only partly needed for specific applications by demand of the user or operator and when subject to regulations.</p>				

WARNING — The properties of the bonded joint may be adversely affected by fire and therefore appropriate protection measures will need to be taken where fire is anticipated.