



SLOVENSKI STANDARD
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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 in strukturellen Klebverbunden - Anforderungen und Prüfverfahren

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

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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 draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 193.

If this draft becomes a European Standard, 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.

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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

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Foreword

This document (FprEN 15274:2014) has been prepared by Technical Committee CEN/TC 193 “Adhesives”, the secretariat of which is held by AENOR.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 15274:2007.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Construction Products Directive (89/106/EEC).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Note: Due to fact that the Framework Partnership Agreement between the Commission and CEN & CENELEC is not signed yet, there are currently no New Approach Consultants in place for 2014. Therefore the provisions of CEN-CENELEC Guide 15 cannot be met.

This shall not prevent the processing of draft standards nor the offering of harmonized standards to the Commission. In particular, draft standards can be sent to vote without Consultant assessment.

This note will be removed from the Foreword of the finalized publication.

FprEN 15274:2014 (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.

This European Standard 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 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 923:2008, *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 bonded assemblies*

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 multi-component adhesives*

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

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

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

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

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

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

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

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

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

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

3 Terms and definitions

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

NOTE CEN/TR 14548 also provides relevant guidance.

4 Performance characteristics for intended uses

4.1 General

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.

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. This is also depending from available test equipment. Especially for production control the test should be easy to perform and show reliable results.
3	Young's modulus	MPa	EN ISO 527-2 EN ISO 527-3	
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	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.