



SLOVENSKI STANDARD
SIST EN 15814:2011+A1:2012
01-december-2012

Bitumenske debeloslojne prevleke, modificirane s polimeri - Definicije in zahteve

Polymer modified bituminous thick coatings for waterproofing - Definitions and requirements

Kunststoffmodifizierte Bitumendickbeschichtungen zur Bauwerksabdichtung - Begriffe und Anforderungen

Revêtements bitumineux épais (modifiés aux polymères pour imperméabilisation - Définitions et exigences

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Ta slovenski standard je istoveten z: EN 15814:2011+A1:2012

ICS:

91.100.50 Veziva. Tesnilni materiali Binders. Sealing materials

SIST EN 15814:2011+A1:2012 **en,fr,de**

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 15814:2011+A1

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English Version

Polymer modified bituminous thick coatings for waterproofing - Definitions and requirements

Revêtements bitumineux épais modifiés aux polymères
pour imperméabilisation - Définitions et exigences

Kunststoffmodifizierte Bitumendickbeschichtungen zur
Bauwerksabdichtung - Begriffe und Anforderungen

This European Standard was approved by CEN on 14 July 2011 and includes Amendment 1 approved by CEN on 20 August 2012.

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.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Foreword

This document (EN 15814:2011+A1:2012) has been prepared by Technical Committee CEN/TC 361 "Project Committee - Thick synthetic modified bituminous coating masses - Definitions and requirements/Test methods", the secretariat of which is held by DIN.

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 April 2013, and conflicting national standards shall be withdrawn at the latest by April 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 includes Amendment 1, approved by CEN on 2012-08-20.

This document supersedes EN 15814:2011.

The start and finish of text introduced or altered by amendment is indicated in the text by tags A1 and A1.

A1 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 Directive(s).

For relationship with EU Directive, see informative Annex ZA, which is an integral part of this document. A1

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.

EN 15814:2011+A1:2012 (E)**1 Scope**

This European Standard specifies the definitions and requirements of prefabricated polymer modified bituminous thick coatings used for the waterproofing of below ground structures. It applies to both one-component and two-component products. These products can be used with or without inlay.

This European Standard does not apply to products that are to be used for roof waterproofing.

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 459-2:2010, *Building lime - Part 2: Test methods*

EN 1931, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

EN 13238, *Reaction to fire tests for building products — Conditioning procedures and general rules for selection of substrates*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13823, *Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item*

EN 15812, *Polymer modified bituminous thick coatings for waterproofing — Determination of crack bridging ability*

EN 15813, *Polymer modified bituminous thick coatings for waterproofing — Determination of flexibility at low temperatures*

EN 15815, *Polymer modified bituminous thick coatings for waterproofing — Resistance to compression*

EN 15816, *Polymer modified bituminous thick coatings for waterproofing — Resistance to rain*

EN 15817, *Polymer modified bituminous thick coatings for waterproofing — Water resistance*

EN 15818, *Polymer modified bituminous thick coatings for water proofing — Determination of dimensional stability at high temperature*

EN 15819, *Polymer modified bituminous thick coatings for waterproofing — Reduction of the thickness of the layer when fully dried*

EN 15820, *Polymer modified bituminous thick coatings for waterproofing — Determination of watertightness*

ISO 1183-1: 2004, *Plastics - Methods for determining the density of non-cellular plastics - Part_1: Immersion method, liquid pycnometer method and titration method*

EN ISO 2811-1:2011, *Paints and varnishes — Determination of density — Part 1: Pycnometer method (ISO 2811-1:1997)*

EN ISO 2811-2, *Paints and varnishes — Determination of density — Part 2: Immersed body (plummet) method (ISO 2811-2:1997)*

EN ISO 3251, *Paints, varnishes and plastics — Determination of non-volatile-matter content (ISO 3251:2008)*

EN ISO 3451-1, *Plastics — Determination of ash — Part 1: General methods (ISO 3451-1:2008)*

EN ISO 3923-1, *Metallic powders — Determination of apparent density — Part 1: Funnel method (ISO 3923-1:2008)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO/FDIS 11925-2:2010)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

crack bridging ability

ability of a product to bridge a crack that originates below ground under specified conditions and without damage

3.2

free film

cured polymer modified bituminous coating emulsion based, which is tested without being applied to a substrate

3.3

inlay

industrially produced material, which is incorporated as an intermediate layer when applying the coating

3.4

PMBC

Polymer **M**odified **B**ituminous **t**hick **C**oating emulsion based, with or without admixtures, such as additives and mineral aggregates, comprising of one or two components **A**

3.5

pressure water

water in ground with hydrostatic pressure

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EN 15814:2011+A1:2012 (E)

4 Requirements

All PMBC according to this European Standard have to fulfil the general requirements of Table 1.

Table 1 — General requirements

Column	1	2				3
Line	Characteristic	Requirement				Test method
1	Crack bridging ability	Class CB 0 No requirement	Class CB 1 No damage Crack width ≥ 1 mm dry layer thickness ≥ 3 mm (MLV)	Class CB 2 No damage Crack width ≥ 2 mm dry layer thickness ≥ 3 mm (MLV)	Class CB 2 No damage Crack width ≥ 2 mm dry layer thickness ≥ 3 mm (MLV)	EN 15812 Method A or B NOTE The test method has to be declared with the classification.
2	Resistance to rain	Class R0 No requirement	Class R1 ≤ 24 h wet layer thickness ≥ 3 mm (MLV)	Class R2 ≤ 8 h wet layer thickness ≥ 3 mm (MLV)	Class R3 ≤ 4 h wet layer thickness ≥ 3 mm (MLV)	EN 15816
3	Water resistance	1.No colouration of the water 2.No debonding from inlay, if used dry layer ≥ 4 mm No changes to the material according to EN 15817,				EN 15817
4	Flexibility at low temperature (A1) deleted text (A1)	No cracks				EN 15813
5	Dimensional stability at high temperature (A1) deleted text (A1)	No sliding or draining down				EN 15818

Table 1 (continued)

Column	1	2			3	
Line	Characteristic	Requirement			Test method	
6	Reduction of layer thickness when fully dried	≤ 50 % (MLV)			EN 15819	
7	Reaction to fire	Class to be declared according to EN 13501-1			Testing in accordance with the specifications in the classification standard EN 13501-1 and Annex A.	
8	Watertightness ^a	Class W1 ≥ 24 h at 0,0075 N/mm ² dry layer thickness without inlay ≥ 3 mm (MLV)	Class W2A ≥ 72 h at 0,075 N/mm ² dry layer thickness with inlay ≥ 4 mm with inlay (MLV)	Class W2B ≥ 72 h at 0,075 N/mm ² dry layer thickness without inlay ≥ 4 mm without inlay (MLV)	EN 15820	
9	Resistance to compression ^a	Class C0 No requirement	Class C1 Stabilization at ≤ 50 % (change maximum 3 % within 3 subsequent days) 0,06 MN/m ² dry layer thickness ≥ 3 mm (MLV)	Class C2A Stabilization at ≤ 50 % (change maximum 3 % within 3 subsequent days) 0,30 MN/m ² dry layer thickness ≥ 4 mm with inlay (MLV)	Class C2B Stabilization at ≤ 50 % (change maximum 3 % within 3 subsequent days) 0,30 MN/m ² dry layer thickness ≥ 4 mm without inlay (MLV)	EN 15815
<p>A1^a The testing procedure of characteristics are also related to durability aspects. A1</p> <p>manufacturer's limiting value (MLV) value stated by the manufacturer to be met during testing. The manufacturer's limiting value can be a minimum or a maximum value according to statements made under product characteristics of this document</p>						

When required, the water vapour diffusion resistance shall be tested in accordance with EN 1931.

EN 15814:2011+A1:2012 (E)**5 Evaluation of conformity****5.1 General**

The compliance of PMBC with the requirements of this standard and with the declared values (including classes) shall be demonstrated by:

- Initial Type Testing;
- factory production control by the manufacturer, including product assessment.

The manufacturer shall always retain the overall control and shall have the necessary means to take responsibility for the product.

5.2 Initial Type Testing – Type Testing**5.2.1 General**

Initial Type Testing and Type Testing shall be performed to demonstrate compliance with this European standard.

All essential characteristics for which the manufacturer declares performances, are subject to Initial Type Testing. In addition, the need to perform Type Tests applies to all other characteristics included in a standard when the manufacturer claims compliance, unless the standard gives provisions (e.g. use of previously existing data, CWFT and conventionally accepted performance) for declaring performances without performing tests.

Tests previously performed in accordance with the provisions of this standard, may be taken into account provided that they were made to the same or a more rigorous test method, under the same system of attestation of conformity on the same product or products of similar design, construction and functionality, such that the results are applicable to the product in question.

NOTE 1 Same system of attestation of conformity means testing by an independent third party (only for products covered by attestation of conformity system 1 and 3), under the responsibility of a product certification body (only for products covered by attestation of conformity system 1). See Annex ZA.

- For the purposes of testing, the manufacturer's products may be grouped into families, where it is considered that the results for one or more characteristics from any one product within the family are representative for that same characteristics for all products within that same family (a product may be in different families for different characteristics).

NOTE 2 Products may be in different families for different characteristics.

NOTE 3 Reference to the test method standards should be made to allow the selection of a suitable representative sample.

In addition, Type Tests or Initial Type Testing shall be performed for all characteristics included in the standard for which the manufacturer declares performances:

- at the beginning of the production of a new or modified PMBC (unless a member of the same family), or
- at the beginning of a new or modified method of production (where this may affect the stated properties); or
- they shall be repeated for the appropriate characteristic(s), whenever a change occurs in the PMBC design, in the raw material or in the supplier of the components, or in the production process (subject to the definition of a family), which would affect significantly one or more of the characteristics.

Where components are used whose characteristics have already been determined, by the component manufacturer, on the basis of compliance with other product standards, these characteristics need not be re-assessed. The specifications of these components shall be documented, as shall be included in the inspection scheme for ensuring their compliance.

Products marked in accordance with appropriate harmonised European specifications may be presumed to have the performances stated with the marking, although this does not replace the responsibility on the PMBC designer to ensure that the PMBC as a whole is correctly designed and its component products have the necessary performance values to meet the design.

5.2.2 Test reports

All Type Tests, and/or Initial Type Tests and their results shall be documented in test reports. All test reports shall be retained by the manufacturer for at least 10 years after the last date of production of the PMBC to which they relate.

5.3 Factory production control (FPC)

5.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market comply with the declared performance of the characteristics.

The FPC system shall consist of procedures, regular inspections and tests and/or assessments and the use of the results to control raw and other incoming materials or components, equipment, the production process and the product. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures.

This production control system documentation shall ensure a common understanding of conformity evaluation and enable the achievement of the required product characteristics and the effective operation of the production control system to be checked. Factory production control therefore brings together operational techniques and all measures allowing maintenance and control of the compliance of the product with this European Standard.

5.3.2 Requirements

5.3.2.1 General

The manufacturer is responsible for organizing the effective implementation of the FPC system. Tasks and responsibilities in the production control organization shall be documented and this documentation shall be kept up-to-date.

The responsibility, authority and the relationship between personnel that manages, performs or verifies work affecting product conformity, shall be defined. This applies in particular to personnel that needs to initiate actions preventing product non-conformities from occurring, actions in case of non-conformities and to identify and register product conformity problems. Personnel performing work affecting product conformity shall be competent on the basis of appropriate education, training, skills and experience for which records shall be maintained.

In each factory the manufacturer may delegate the action to a person having the necessary authority to:

- identify procedures to demonstrate conformity of the product at appropriate stages;
- identify and record any instance of non-conformity;
- identify procedures to correct instances of non-conformity.

The manufacturer shall draw up and keep up-to-date documents defining the factory production control. The manufacturer's documentation and procedures should be appropriate to the product and manufacturing process. The FPC system should achieve an appropriate level of confidence in the conformity of the product.