SLOVENSKI STANDARD
oSIST prEN 13707:2017

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Hidroizolacijski trakovi - Ojačeni bitumenski trakovi za tesnjenje streh - Definicije in lastnosti

Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing - Definitions and characteristics

Abdichtungsbahnen - Bitumenbahnen mit Trägereinlage für Dachabdichtungen - Definitionen und Eigenschaften

Ta slovenski standard je istoveten z: **prEN 13707**

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01.040.91	Gradbeni materiali in gradnja (Slovarji)	Construction materials and building (Vocabularies)
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English Version

Flexible sheets for waterproofing - Reinforced bitumen sheets for roof waterproofing - Definitions and characteristics

Abdichtungsbahnen - Bitumenbahnen mit Trägereinlage für Dachabdichtungen - Definitionen und Eigenschaften

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 254.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

European foreword

This document (prEN 13707:2017) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 13707:2013.

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 Regulation 305/2011.

For relationship with EU Regulation 305/2011, see informative Annex ZA, which is an integral part of this document.

The main technical changes that have been made in this new edition are as follows:

a) Subclause 5.2.5 Fire performance has been modified;

b) the wording and Annex ZA have been adapted to the CPR.

1 Scope

This draft European Standard specifies definitions and characteristics for flexible reinforced bitumen sheets for which the intended use is roofing. This covers sheets used as top layers, intermediate layers and underlayers.

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 1107-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of dimensional stability*

EN 1108, *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of form stability under cyclical temperature changes*

EN 1109, *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flexibility at low temperature*

EN 1110, *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of flow resistance at elevated temperature*

CEN/TS 1187:2012, *Test methods for external fire exposure to roofs*

EN 1296, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roofing — Method of artificial ageing by long term exposure to elevated temperature*

EN 1297, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Method of artificial ageing by long term exposure to the combination of UV radiation, elevated temperature and water*

EN 1848-1, *Flexible sheets for waterproofing — Determination of length, width and straightness — Part 1: Bitumen sheets for roof waterproofing*

EN 1849-1, *Flexible sheets for waterproofing — Determination of thickness and mass per unit are — Part 1: Bitumen sheets for roof waterproofing*

EN 1850-1, *Flexible sheets for waterproofing — Determination of visible defects — Part 1: Bitumen sheets for roof waterproofing*

EN 1928:2000, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness*

EN 12039, *Flexible sheets for waterproofing — Bitumen sheets for roof waterproofing — Determination of adhesion of granules*

EN 12310-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for waterproofing — Determination of resistance to tearing (nail shank)*

EN 12311-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of tensile properties*

EN 12316-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of peel resistance of joints*

EN 12317-1, *Flexible sheets for waterproofing — Part 1: Bitumen sheets for roof waterproofing — Determination of shear resistance of joints*

EN 12691, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*

EN 12730:2001, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*

EN 13416:2001, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling*

EN 13163, *Thermal insulation products for buildings — Factory made expanded polystyrene (EPS) products — Specification*

EN 13501-1:2002, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN 13501-5:2016, *Fire classification of construction products and building elements — Part 5: Classification using data from external fire exposure to roofs tests*

EN 13897, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing — Determination of watertightness after stretching at low temperature*

EN 13948, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to root penetration*

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

3 Terms and definitions

For the purposes of this document the terms and definitions given in EN 13416:2001 and the following apply.

3.1
waterproofing
action to prevent the passage of water from one plane to another

3.2
waterproofing system
assembly of one or more layers of roofing sheet in its applied and jointed form, which has certain performance characteristics, to be assessed as a whole

Note 1 to entry: Where only one layer is used this is usually referred to as a single layer system.

Note 2 to entry: A bituminous roofing system is formed on site by connecting and sealing one or more superimposed layers of bitumen sheets to form a single composite waterproof layer for use over flat, pitched or vertical surfaces according to building application requirements.

3.3
roofing
waterproofing used in the roof of a building including roofs used for parking of vehicles and for roof gardens

Note 1 to entry: Reinforced bitumen sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete where the waterproofing system is bonded to the concrete deck and overlaid by asphalt are specified in EN 14695.

3.4
roof system
assembly of a waterproofing system, insulation, vapour barrier and supporting elements

3.5
roofing sheet
factory made flexible sheet including any carriers, facings, surface texture and/or backing

3.6
carrier
material incorporated into or onto the factory-made roofing sheet to ensure its stability and/or mechanical resistance

3.7
backing
material incorporated onto the factory-made roofing sheet without a permanent mechanical function

3.8
surfacing
material applied on one or both sides of roofing sheets, either as a permanent light surface protection against weathering on the upper surface or as an anti-sticking substance of the roofing sheets

3.9
batch
amount of product manufactured to the same specification within a maximum period of 24 h

3.10
manufacturer's limiting value
MLV
value which is stated by the manufacturer to be met during testing and which can be a minimum or a maximum value according to statements made under product characteristics of this document

3.11
manufacturer's declared value
MDV
value declared by the manufacturer accompanied by a declared tolerance

3.12
reinforced bitumen sheet
factory made flexible layer of bitumen with internal or external incorporation of one or more carriers, supplied in roll form ready for use

3.13
oxidized bitumen
straight run petroleum bitumen or a fluxed bitumen which has been hardened and rendered less temperature susceptible by blowing with air at high temperature with or without the use of a catalyst

3.14
elastomeric bitumen
petroleum bitumen and/or oxidized bitumen modified by the addition of thermo-plastic rubbers

3.15
plastomeric bitumen
petroleum bitumen and/or oxidized bitumen modified by the addition of polyolefin or polyolefin copolymer compound

3.16
sampling
procedure used to select or constitute a sample

3.17
sample
sheet from which a test piece is taken

3.18
test piece
part of the sample from which test specimens are taken

3.19
test specimen
piece of precise dimensions taken from the test piece

4 System-related characteristics

System-related characteristics with respect to multilayer systems, sheets for single layer application, mechanically fastened systems (see Annex F) and roof gardens or under heavy protection are given in Annex A.

5 Product characteristics

5.1 General

Where a tolerance is limited by this standard it does not have to be declared by the manufacturer.

When tested for purposes other than type testing or factory production control, the tests to determine product characteristics indicated in this standard shall be started within one month of delivery from the manufacturer.

NOTE This time period is chosen in order to limit the effect of inappropriate handling and storage after delivery by people other than the manufacturer.

5.2 Characteristics

5.2.1 Visible defects

The product shall be free of visible defects, as determined in accordance with EN 1850-1.

5.2.2 Dimensions, tolerances and mass per unit area

The length, width and straightness of the sheet shall be determined in accordance with EN 1848-1. The length and width shall not be shorter than the manufacturer's limiting value. The maximum deviation from straightness shall not exceed 20 mm per 10 m length or in proportion for other lengths (e.g. 10 mm per 5 m length).

Where a product is specified by mass per unit area, it shall be measured in accordance with EN 1849-1, except that the sample shall be 100 mm × 100 mm, and the results shall lie within the declared tolerance of the manufacturer's declared value.

Where a product is specified by thickness, it shall be measured in accordance with EN 1849-1 and the results shall lie within the declared tolerance of the manufacturer's declared value.

Where sheets with incorporated mineral protection are specified by thickness, the measurement of thickness may be carried out on the granule-free selvedge. This shall be declared in the report.

5.2.3 Water tightness

The water tightness shall be determined in accordance with EN 1928:2000 using method A or B at an applied water pressure of 10 kPa (0,1 bar) and shall give a pass result.

5.2.4 Effects of water

Not specified.

NOTE Experience has shown that water has little or no effect upon the in-service performance of reinforced bitumen sheets. See also Annex C.

5.2.5 Fire performance

5.2.5.1 External fire performance

5.2.5.1.1 Product

When there is a requirement on external fire performance for products, the external fire performance shall be declared in accordance to EN 13501-5 and CEN/TS 1187.

For B_{roof} (t1) classification the product might be tested by using a fixed test configuration as shown in Annex D.

NOTE 1 Classification of the external fire performance of the product is given in the Commission Decision 2001/671/EC as amended.

NOTE 2 Products intended to be fully covered in normal usage, see Commission Decision 2000/553/EC, are considered to fulfil requirements for the performance characteristics 'external fire performance' without the need for testing.

NOTE 3 Different roof systems can lead to different classifications.

5.2.5.1.2 System

When there is no requirement on external fire performance for products but only roof systems, no external fire performance classification of the product is relevant.

5.2.5.2 Reaction to fire

Where required, the product shall be tested and classified in accordance with EN 13501-1:2002, Table 1. When tested according to EN ISO 11925-2, the products shall be tested under conditions of surface flame attack.

NOTE It is currently considered that the Euro classes Classification system at Classes D and above requires investigation to determine its appropriateness to the products covered by this document (the SBI test may be inappropriate for products covered by the standard). Pending results of such an investigation and discussions in the Fire Regulators Group, products covered by this document are tested to EN ISO 11925-2. If and when new fire test scenario and test methods are developed for the products, this document will be amended to refer to them.

Reaction to fire is by definition a product test, as distinct from Resistance to fire, which is a system test. Therefore, it is considered important to provide guidance in order to reduce the number of tests required.

According to EN ISO 11925-2, the test is required to be undertaken on the exposed surface without any substrate, in one direction only, and the reinforcement shall be stated by the manufacturer as “organic” or “inorganic”.

c) Test results from EN ISO 11925-2 for a product with a given reinforcement and a bituminous compound having a certain percentage of organic content shall apply to the same product having a lower organic content.

d) Test results from EN ISO 11925-2 for a product with a given organic reinforcement and a bituminous compound shall apply to a product having the same bituminous compound and an inorganic reinforcement.

e) Test results from EN ISO 11925-2 for a product with a given reinforcement and bituminous compound, with a thickness of above 2 mm or a mass per unit area of above 2 kg/m², shall apply to any product with the same type of reinforcement and the same type of bituminous compound but lower thickness or mass per unit area, down to a limit of 2 mm or 2 kg/m² respectively.

Test results from EN ISO 11925-2 for a product with a given reinforcement and bituminous compound with a thickness or mass per unit area below 2 mm or 2kg/m², shall apply to any product with the same type of reinforcement and the same type of bituminous compound but with higher thickness or mass per unit area, up to a limit of 2 mm or 2 kg/m² respectively.

5.2.6 Resistance to hail

Not specified.

NOTE Experience has shown that hail has little or no effect upon the in-service performance of reinforced bitumen sheets.

5.2.7 Water tightness after stretching at low temperature

Where required, the water tightness after stretching at low temperature shall only be determined for mechanically fastened single layer applications in accordance with EN 13897 and the results shall be greater than or equal to the manufacturer's limiting value.

5.2.8 Joint strength

The peel resistance of joints shall only be determined for mechanically fastened single layer applications in accordance with EN 12316-1 and the results shall lie within the declared tolerance of the manufacturer's declared value.

The shear resistance of joints shall be determined for all single layer applications in accordance with EN 12317-1 and the results shall lie within the declared tolerance of the manufacturer's declared value.