SLOVENSKI STANDARD
SIST EN 13969:2005

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Hidroizolacijski trakovi - Bitumenski tesnilni trakovi za temelje - Definicije in lastnosti

Flexible sheets for waterproofing - Bitumen damp proof sheets including bitumen basement tanking sheets - Definitions and characteristics

Abdichtungsbahnen - Bitumenbahnen für die Bauwerksabdichtung gegen Bodenfeuchte und Wasser - Definitionen und Eigenschaften

Feuilles souples d'étanchéité - Feuilles bitumineuses empêchant les remontées d'humidité du sol - Définitions et caractéristiques

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Flexible sheets for waterproofing - Bitumen damp proof sheets including bitumen basement tanking sheets - Definitions and characteristics

Feuilles souples d'étanchéité - Feuilles bitumineuses empêchant les remontées d'humidité du sol - Définitions et caractéristiques

Abdichtungsbahnen - Bitumenbahn-Feuchtigheitssprerren - Definitionen und Eigenschaften

This European Standard was approved by CEN on 20 October 2004.

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Foreword

This document (EN 13969:2004) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by June 2005, and conflicting national standards shall be withdrawn at the latest by September 2006.

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(s), see informative Annex ZA, which is an integral part of this document.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This document specifies definitions and characteristics of flexible reinforced bitumen sheets for which the intended use is as damp proofing for buildings, including basement tanking. It specifies the requirements and test methods and provides for the evaluation of conformity of the products with the requirements of this standard.

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

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 1847, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Methods of exposure to liquid chemicals, including 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 area — 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 1931, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of water vapour transmission properties*

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, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling*

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

EN ISO 9001, *Quality management systems — Requirements (ISO 9001:2000)*

EN ISO 11925-2, *Reaction to fire tests — Ignitability of building products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2:2002)*

3 Terms and definitions

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

3.1
sheet for damp proofing
factory made flexible sheet made of bitumen material or composites used on or under floors or ground slabs or in walls to prevent liquid water not under hydrostatic pressure passing from the ground into the internal environment

3.2
tanking sheet
factory made flexible sheet made of bitumen material or composites used in wall construction, or on or under floors or ground slabs to prevent liquid water under hydrostatic pressure passing from the ground into the internal environment or from one section of the structure to another

3.3
carrier
material incorporated into or onto the factory-made waterproofing sheet to ensure its stability and/or mechanical resistance

3.4
backing
material incorporated onto the factory-made sheet without a permanent mechanical function

3.5
surfacing
material applied to the surfaces of waterproofing sheets, either as a permanent protection against weathering on the upper surface or as an anti-sticking substance on one or both surfaces of the waterproofing sheets

3.6
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

3.7
manufacturer's declared value MDV
value declared by the manufacturer accompanied by a declared tolerance

3.8
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

3.9
elastomeric bitumen
petroleum bitumen and/or oxidized bitumen modified by the addition of thermo-plastic rubbers

3.10
plastomeric bitumen
petroleum bitumen and/or oxidized bitumen modified by the addition of polyolefin or polyolefin copolymer compound

3.11
reinforced bitumen sheet
factory made flexible of bitumen with internal or external incorporation of one or more carriers, supplied in roll form ready to use

3.12
sampling
procedure used to select or constitute a sample

3.13
sample
sheet from which a test piece is taken

3.14
test piece
part of the sample from which test specimens are taken

3.15
test specimen
piece of precise dimensions taken from the test piece

4 Types of product

The types of damp proof sheets covered by this document are designated as follows:

Type A: Bitumen damp proof sheet;

Type T: Bitumen tanking sheet.

5 Product characteristics

5.1 General

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

5.1.2 When tested for purposes other than initial type testing or factory production control, the tests to determine product characteristics indicated in this document shall be started within 1 month of delivery from the manufacturer.

5.2 Visible defects

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

5.3 Dimensions and tolerances

The length, width and straightness shall be determined in accordance with EN 1848-1. The length and width shall be greater than or equal to the manufacturer's limiting value (MLV). 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).

5.4 Thickness and mass per unit area

The thickness and mass per unit area shall be determined in accordance with EN 1849-1. If a product is specified by mass per unit area no single measurement shall lie outside the tolerance declared by the manufacturer's declared value. If a product is specified by thickness, no single measurement value shall lie outside the tolerance declared by the manufacturer's declared value.

5.5 Water tightness

Watertightness shall be determined by Method A or B of EN 1928:2000 using a pressure of 2 kPa for Type A bitumen damp proof sheets and a pressure of 60 kPa for Type T bitumen tanking sheets and shall give a pass result.

5.6 Resistance to impact

Where required, the resistance to impact shall be determined in accordance with EN 12691 but with a drop height of 300 mm ± 5 mm. The smallest diameter it will resist shall be less than or equal to the manufacturer's limiting value. The expression of the manufacturer's limiting value in millimetres shall be accompanied by the drop height h = 300 mm.

5.7 Durability

5.7.1 Against artificial ageing/degradation

In order to verify the artificial ageing behaviour of the product, watertightness shall be determined after exposure in accordance with EN 1296 for a period of 12 weeks. The watertightness shall be determined in accordance with EN 1928:2000 Method A or B. Type A bitumen damp proof sheets shall be tested at a pressure of 2 kPa and Type T bitumen tanking sheets at a pressure of 60 kPa and shall give a pass result.

5.7.2 Against chemicals

Information about the chemical resistance of bitumen is given in Annex B. Where the product is likely to come into contact with a "not stable in all cases" substance the resistance shall be evaluated according to EN 1847, the test parameters being declared with the result, and subsequently tested to EN 1928, giving a pass result.

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

5.8 Flexibility at low temperatures (pliability)

Where required, the flexibility at low temperatures shall be determined in accordance with EN 1109 and shall be less than or equal to the manufacturer's limiting value.

NOTE This test does not give results corresponding to the application conditions in practice. Results should be used only to compare products of similar thickness and construction.

5.9 Resistance to tearing (nail shank)

The tear resistance (nail shank) shall be determined in accordance with EN 12310-1 and shall lie within the declared tolerance of the manufacturer's declared value.

5.10 Joint strength

Where required, the joint strength shall be determined in accordance with EN 12317-1 and shall lie within the declared tolerance of the manufacturer's declared value.

5.11 Water vapour transmission properties

Where required, the water vapour resistance shall be determined in accordance with EN 1931 and shall lie within the declared tolerance of the manufacturer's declared value.

5.12 Resistance to static loading

The resistance to static loading shall be determined in accordance with Method B of EN 12730:2001 and shall be greater than or equal to the manufacturer's limiting value.

5.13 Tensile properties

The tensile properties shall be determined in accordance with EN 12311-1 and shall lie within the declared tolerance of the manufacturer's declared value for the longitudinal and transverse directions of the sheet.

5.14 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 Euroclasses 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 document). 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 a new fire test scenario and test method are developed for the products, this document will be amended to refer to them.

5.15 Dangerous substances

For products placed on the market within the European Economic Area see ZA.1. Outside the EEA products shall conform to any applicable provisions related to dangerous substances valid in the place of use.

Bitumen sheets covered by this document shall not contain asbestos or coal tar constituents. The manufacturer shall disclose on the product wrapper and in the health and safety data sheets the use of any additive or constituent considered hazardous.

6 Evaluation of conformity

6.1 General

The compliance of a reinforced bitumen damp proof sheet with the requirements of this document and with the stated values (including classes) shall be demonstrated by:

- initial type testing;
- factory production control by the manufacturer, including product assessment.

For the purposes of testing, products may be grouped into families, where it is considered that the selected property is common to all products within that family.

6.2 Type testing

6.2.1 General

Initial type testing shall be performed to show conformity to this document. Tests previously performed in accordance with the provisions of this document (same product, same characteristic(s), test method, sampling procedure, system of attestation of conformity, etc.) may be taken into account. In addition, initial type testing shall be performed at the beginning of the production of a new product type (unless a member of the same family) or at the beginning of a new method of production (where this may affect the stated properties).

All characteristics in Clause 5 shall be subject to initial type testing, where required.

Whenever a change occurs in the product design, the raw material or supplier of the components, or the production process (subject to the definition of a family), which would change significantly one or more of the characteristics, the type tests shall be repeated for the appropriate characteristic(s).

6.2.2 Sampling

Samples shall be taken according to EN 13416. The minimum number of tests to show compliance for initial and further type testing shall be one for all characteristics.

6.3 Factory production control (FPC)

6.3.1 General

The manufacturer shall establish, document and maintain an FPC system to ensure that the products placed on the market conform with the stated performance 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.

If a manufacturer claims compliance with FPC requirements by operating an EN ISO 9001 system, EN ISO 9001 shall be applied in full and shall be made specific to the requirements of this document.

The results of inspections, tests or assessments requiring action shall be recorded, as shall any action taken. The action to be taken when control values or criteria are not met shall be recorded.

6.3.2 Frequency of testing

The characteristics to be controlled within the framework of factory production control are those for which the manufacturer claims a performance. Control of the product is required, either by direct testing or by indirect control. The frequency of testing shall be given in the manufacturer's FPC system.