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Hidroizolacijski trakovi - Polimerni in elastomerni tesnilni trakovi za temelje - Definicije in lastnosti

Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics

Abdichtungsbahnen - Kunststoff- und Elastomerbahnen für die Bauwerksabdichtung gegen Bodenfeuchte und Wasser - Definitionen und Eigenschaften

Feuilles souples d'étanchéité - Feuilles plastiques et élastomères empêchant les remontées capillaires du sol - Définitions et caractéristiques

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EUROPEAN STANDARD

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English Version

Flexible sheets for waterproofing - Plastic and rubber damp proof sheets including plastic and rubber basement tanking sheet - Definitions and characteristics

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This European Standard was approved by CEN on 23 March 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.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 13967:2012) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by October 2012, and conflicting national standards shall be withdrawn at the latest by October 2012.

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 supersedes EN 13967:2004.

The main technical changes are:

— For durability against chemicals, EN 1847:2009 of TC 254 is used instead of special Annex C.

— The minimum tolerance for the water vapour transmission is fixed.

— The rules for mounting and fixing for reaction of fire testing are improved and the variation of products where results apply are fixed.

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.

This European Standard is a general product standard for flexible sheets of plastics intended for damp proof sheets, including plastics basement tanking sheets, for use in buildings. This standard is one of a series of product standards for factory made flexible sheets for use in buildings.

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, 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.

1 Scope

This document specifies definitions and characteristics of flexible plastic and rubber sheets which are intended to be used 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 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 1296, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roofing — Method of artificial ageing by long term exposure to elevated temperature*

EN 1548, *Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Method for exposure to bitumen*

EN 1847:2009, *Flexible sheets for waterproofing —Plastic and rubber sheets for roof waterproofing — Methods for exposure to liquid chemicals, including water*

EN 1848-2, *Flexible sheets for waterproofing — Determination of length, width, straightness and flatness — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 1849-2, *Flexible sheets for waterproofing — Determination of thickness and mass per unit area — Part 2: Plastic and rubber sheets*

EN 1850-2, *Flexible sheets for waterproofing — Determination of visible defects — Part 2: Plastic and rubber 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 12311-2, *Flexible sheets for waterproofing — Determination of tensile properties — Part 2: Plastic and rubber sheets for roof waterproofing*

EN 12317-2, *Flexible sheets for waterproofing — Determination of shear resistance of joints — Part 2: Plastic and rubber sheets for roof waterproofing*

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 13501-1:2007+A1:2009, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13859-1:2010, *Flexible sheets for waterproofing — Definitions and characteristics of underlays — Part 1: Underlays for discontinuous roofing*

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
sheet for damp proofing
plastic or rubber sheet used on or under floors/ground slabs or in walls to prevent liquid water not under hydrostatic pressure passing from the ground into the internal environment

3.2
ventilating or draining damp proof sheet
sheet conforming to the definition in 3.1 and with the ability to provide a continuous void or structure to allow free movement of water vapour or liquid water between the sheet and any further construction

3.3
tanking sheet
sheet conforming to the definition in 3.1 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

3.4
manufacturer's limiting value
MLV
value stated by the manufacturer to be met during testing

Note 1 to entry: The manufacturer's limiting value can be a minimum value or a maximum value, according to statements made under product characteristics of this standard.

3.5
manufacturer's declared value
MDV
value declared by the manufacturer accompanied by a declared tolerance

3.6
plastic sheet
factory-made flexible sheet made from a plastic polymeric material and which may include composites of other materials

3.7
rubber sheet
factory-made flexible sheet made from an elastomeric polymeric material and which may include composites of other materials

3.8
sampling
procedure used to select or constitute a sample

3.9
sample
sheet from which a test piece is taken

3.10
test piece
part of the sample from which test specimens are taken

3.11
test specimen
piece of precise dimensions taken from the test piece

3.12
batch
amount of product continuously manufactured to the same specification

4 Product designation

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

TYPE A damp proof sheet;

TYPE V damp proof ventilating or draining sheet;

TYPE T tanking sheet.

5 Product characteristics

5.1 General

5.1.1 Where a tolerance is specified 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 Deviation from test sample dimensions

Where the contours of the product make it impossible to obtain a test sample of the required dimensions, or otherwise render the test impracticable, testing may be carried out either on samples of different dimensions, or if still impracticable, on the equivalent flat sheet of the same thickness as the finished product. Any such deviations from the test method shall be recorded on the test report and the product data sheet.

5.3 Visible defects

The product shall be free of visible defects as determined in accordance with EN 1850-2.

5.4 Dimensions and tolerances

The length, width and straightness shall be determined in accordance with EN 1848-2. The length and width shall lie within the declared tolerance of the manufacturer's declared value (MDV). The maximum deviation from straightness shall not exceed 75 mm per 10 m length or shall be in the same proportion for other lengths (e.g. 37,5 mm per 5 m length).

5.5 Thickness and mass per unit area

The thickness and mass per unit area shall be determined in accordance with EN 1849-2.

Where a product is specified by mass per unit area, the mass shall lie within the declared tolerance of the manufacturer's declared value. Where the dimensions of any profile are comparable to the area to be measured, a larger sample area shall be used and the deviation from the test method noted.

Where a product is specified by thickness, the thickness shall lie within the declared tolerance of the manufacturer's declared value. No single measurement shall lie outside the declared tolerance of the manufacturer's declared value.

5.6 Water tightness

The product shall be watertight as determined by Method A or B of EN 1928:2000 with a pressure of 2 kPa for Types A and V damp proof sheets and a pressure of 60 kPa for Type T damp proof sheets.

5.7 Resistance to impact

Where required, the resistance to impact shall be determined in accordance with EN 12691 and the result shall be greater than or equal to the manufacturer's limiting value.

5.8 Durability

5.8.1 Against 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 and V damp proof sheets shall be tested at a pressure of 2 kPa and Type T tanking sheets at a pressure of 60 kPa, and shall give a pass result.

5.8.2 Against chemicals

In order to verify the durability of the products, the sheet shall be tested before and after exposure to chemicals in accordance with EN 1847. The sheet shall be watertight as determined in accordance EN 1928:2000 Method A or B, with a pressure of 2 kPa for Types A and V damp proof sheets and a pressure of 60 kPa for Type T damp proof sheets, both before and after long-term exposure to alkali, in accordance with EN 1847:2009 test liquid 2 (milk of lime), 28 d, 23 °C.

5.9 Compatibility with bitumen

Where required, the product shall be exposed to bitumen for 28 days at 70 °C using the method given in EN 1548, but with a sample size large enough to provide a 200 mm diameter circular sample after exposure. It shall be watertight when subsequently tested in accordance with Method A of EN 1928:2000. Type A and V damp proof sheets shall be tested at a pressure of 2 kPa and Type T tanking sheets at a pressure of 60 kPa.

5.10 Resistance to tearing (nail shank)

For unreinforced sheets, the tear resistance (nail shank) shall be determined in accordance with EN 12310-1 and shall be greater than or equal to the manufacturer's limiting value.

For reinforced sheets the tear resistance (nail shank) shall be determined in accordance with Annex B of EN 13859-1:2010 and shall be greater than or equal to the manufacturer's limiting value.

5.11 Joint strength

Where required, the joint strength shall be determined in accordance with EN 12317-2 and shall be greater than or equal to the manufacturer's limiting value.

5.12 Water vapour transmission properties

Where required, the moisture resistance factor μ of plastic and rubber sheets shall be determined in accordance with EN 1931 and the result shall lie within the declared tolerance of the MDV. The tolerance of the MDV shall lie in ± 30 %.

5.13 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.

5.14 Tensile properties

The tensile properties of unreinforced sheets shall be determined in accordance with EN 12311-2 and shall be greater than or equal to the manufacturer's limiting value for the longitudinal and transverse directions of the sheet.

The tensile properties of reinforced sheets shall be determined in accordance with Annex A of EN 13859-1:2010 and shall be greater than or equal to the manufacturer's limiting value for the longitudinal and transverse directions of the sheet.

5.15 Resistance to deformation under load

The resistance of ventilating or draining damp proof sheets to deformation under load shall be determined in accordance with Annex B and the results shall be less than or equal to the manufacturer's limiting value of deformation at the defined load and the defined time.

5.16 Reaction to fire

Where required, the product shall be tested and classified in accordance with EN 13501-1:2007+A1:2009, Table 1. According to EN ISO 11925-2, the test is required to be undertaken on the exposed surface of the delivered flexible sheet membrane (surface exposure), free hanging without any substrate, in one direction only. The reinforcement shall be stated by the manufacturer as “organic” or “inorganic”.

a) Test results from EN ISO 11925-2 for a given product shall apply to all colors (including black and white).

b) Test results from EN ISO 11925-2 for a given product without an inner layer (homogenous) shall apply to a comparable product with an additional organic inner layer (lower than 150g/m^2) or any additional inorganic layer.

c) Test results from EN ISO 11925-2 for a product with a thickness of above 1 mm shall apply to any comparable product with a higher thickness up to a limit of 3 mm respectively

d) Test results from EN ISO 11925-2 for a given product with a backing shall apply to a comparable product with a backing of the same type of lower mass per unit area or no backing.

NOTE Whether the Euroclasses Classification system at Classes D and above requires investigation to determine its appropriateness to the products covered by this document is currently under consideration. (In particular it is thought that the SBI test may be inappropriate for products covered by the standard.) Pending results of such an investigation and discussions in the Fire Experts 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.

5.17 Dangerous substances

NOTE 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.

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 plastic or rubber damp proofing 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 the selected property is considered common to all products within that family.

6.2 Type testing

6.2.1 General

Initial type testing shall be performed to show conformity with this document. Tests previously performed in accordance with the provisions of this standard (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, 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 to 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.