SLOVENSKI STANDARD
SIST EN 13984:2013

01-april-2013

Nadomešča:
SIST EN 13984:2005
SIST EN 13984:2005/A1:2007

Hidroizolacijski trakovi - Polimerni in elastomerni trakovi, ki kontrolirajo gibanje vode in/ali vodne pare - Definicije in lastnosti

Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics

Abdichtungsbahnen - Kunststoff- und Elastomer-Dampfsperrbahnen - Definitionen und Eigenschaften

Feuilles souples d'étanchéité - Feuilles plastiques et élastomères utilisées comme pare-vapeur - Définitions et caractéristiques

Ta slovenski standard je istoveten z: **EN 13984:2013**

ICS:

01.040.91	Gradbeni materiali in gradnja (Slovarji)	Construction materials and building (Vocabularies)
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

SIST EN 13984:2013 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13984

February 2013

ICS 91.100.50; 01.040.91

Supersedes EN 13984:2004

English Version

Flexible sheets for waterproofing - Plastic and rubber vapour control layers - Definitions and characteristics

Feuilles souples d'étanchéité - Feuilles plastiques et élastomères utilisées comme pare-vapeur - Définitions et caractéristiques

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This European Standard was approved by CEN on 8 December 2012.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 13984:2013: E

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Foreword

This document (EN 13984:2013) 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of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.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 supersedes EN 13984:2004.

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 Directives.

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

Compared with EN 13984:2004, the following main technical changes were made:

— new extended mounting and fixing rules;

— durability against chemicals is specified after EN 1847.

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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.

1 Scope

This European Standard specifies the characteristics of flexible sheets of plastic or rubber intended for use as water vapour control layers for buildings and applies to both reinforced and unreinforced products. It specifies requirements and test methods and provides for the evaluation of conformity of the products with the requirements of this European 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 1847, *Flexible sheets for waterproofing — Plastics 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 the 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 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 — Single-flame source test (ISO 11925-2)*

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

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
water vapour control layers
flexible sheet of plastic or rubber or composites sheet whose function is to control the movement of water and/or water vapour through a wall, floor or roof

Note 1 to entry: They may have different permeabilities to water vapour depending on the specific use. In composite sheets, the plastic sheet is the functional component.

3.2
ventilating or draining vapour control layers
flexible sheets conforming to the definition in 3.1 but 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
manufacturer's limiting value
MLV
value stated by the manufacturer to be met during testing, which can be a minimum or a maximum value according to statements made under product characteristics of this document

3.4
manufacturer's declared value
MDV
value declared by the manufacturer accompanied by a declared tolerance

3.5
plastic sheet
factory made flexible sheet made from a plastic elastomeric polymeric material and which may include composites with other materials

3.6
rubber sheet
factory made flexible sheet made from an elastomeric polymeric material and which may include composites with other materials

3.7
sampling
procedure used to select or constitute a sample

3.8
sample
sheet from which a test piece is taken

3.9
test piece
part of the sample from which test specimens are taken

3.10
test specimen
piece of precise dimensions taken from the test piece

4 Product designation

The types of vapour control layers covered by this European Standard are designated as follows:

— **Type A:** Vapour control layers;

— **Type B:** Vapour control layers – non-water tight;

— **Type V:** Vapour control layers - ventilating or draining vapour control layer.

5 Product characteristics

5.1 General

5.1.1 Where a tolerance is limited by this European Standard, 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 European Standard shall be started within one month of delivery from the manufacturer.

5.2 Visible defects

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

5.3 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 in proportion for other lengths (e.g. 37,5 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 1849-2.

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 minimum 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.

5.5 Water tightness

Types A and V vapour control sheets shall be watertight as determined by EN 1928:2000, Method A, with a pressure of 2 kPa.

5.6 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.

5.7 Durability

5.7.1 After exposure to artificial ageing

The product shall be exposed to an elevated temperature of 70 °C for 12 weeks in accordance with EN 1296. The water vapour resistance of the aged product shall not change by more than ± 50 % of that of the un-aged product when tested to EN 1931.

5.7.2 Against alkali

Where required, the resistance against alkali of vapour control sheets shall be tested before and after exposure to chemicals in accordance with EN 1847. Before and after the long term exposure to alkali in accordance with EN 1847, test liquid 2 (milk of lime), 28 d at 23 °C, the tensile properties are tested in accordance with EN 12311-2. The maximum tensile force shall not be reduced more than 50 % after storage.

5.8 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.

5.9 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.

5.10 Water vapour transmission properties

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.

5.11 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.

5.12 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 (surface or edge exposure) free hanging without any substrate in one direction only, and the reinforcement has to 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 colours (including black, 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 150 g/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 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 standard (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 a new fire test scenario and test method are developed for the products, this standard will be amended to refer to them.

5.13 Resistance to deformation under load

The resistance to deformation under load shall be determined in accordance with Annex B and the results shall be greater than or equal to the manufacturer's limiting value.

5.14 Dangerous substances

Materials used in products shall not release any dangerous substances in excess of the maximum permitted levels specified in a relevant European Standard for the material or permitted in the national regulations of the member state of destination.

NOTE For additional information, see Annex ZA.

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 vapour control layer with the requirements of this European Standard and with the stated values (including classes) shall be demonstrated by:

— initial type testing;

— factory production control by the manufacturer.

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 with this European Standard. Tests previously performed in accordance with the provisions of this European 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 (see Table 1).

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 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 European Standard.

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 factory production control system.

Table 1 — Compliance criteria for initial type testing *(1 of 2)*

Property	Product type			Parameter	Clause in this document	Test method	Compliance criteria (where required)
	A	B	V				
Water vapour transmission	*	*	*	MDV	5.10	EN 1931	Within declared tolerance of the MDV
Water tightness to liquid water	*		*	Watertight at 2 kPa	5.5	EN 1928	Pass
Reaction to fire	*	*	*	Euroclass	5.12	EN 13501-1 (see Note in 5.12)	Classification
Tensile properties - unreinforced sheets - reinforced sheets	 * *	 * *	 * *	 MLV MLV	 5.11 5.11	 EN 12311-2 EN 13859-1	Greater than or equal to MLV
Durability of water vapour resistance against ageing	*	*	*	Not more than ± 50% change	5.7.1	EN 1296 evaluation testing according to EN 1931	Pass