

# SVENSK STANDARD

## SS-EN 13984:2013



Fastställt/Approved: 2013-02-17

Publicerad/Published: 2013-02-18

Utgåva/Edition: 2

Språk/Language: engelska/English

ICS: 01.040.91; 91.100.50

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### **Flexibla tätskikt – Ångspärrar av plast och gummi – Definitioner och karaktäriserande egenskaper**

### **Flexible sheets for waterproofing – Plastic and rubber vapour control layers – Definitions and characteristics**

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Denna standard ersätter SS-EN 13984:2005, utgåva 1 och SS-EN 13984:2005/A1:2006, utgåva 1.

The European Standard EN 13984:2013 has the status of a Swedish Standard. This document contains the official version of EN 13984:2013.

This standard supersedes the Swedish Standard SS-EN 13984:2005, edition 1 and SS-EN 13984:2005/A1:2006, edition 1.

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EUROPEAN STANDARD

**EN 13984**

NORME EUROPÉENNE

EUROPÄISCHE NORM

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

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

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

## SS-EN 13984:2013 (E)

### 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

## SS-EN 13984:2013 (E)

### 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  $\pm 50$  % 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<sup>2</sup>) or any additional inorganic layer.