BS EN 13984:2013

BSI Standards Publication

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

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National foreword

This British Standard is the UK implementation of EN 13984:2013. It supersedes BS EN 13984:2004+A1:2006, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/546, Flexible sheets for waterproofing and water vapour control.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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

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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of an identical text or by endorsement, at the latest by August 2013, and conflicting national standards shall be withdrawn at the latest by August 2013.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	*	*	*	MLV	5.11	EN 12311-2	Greater than or equal to MLV
- reinforced sheets	*	*	*	MLV	5.11	EN 13859-1	
Durability of water vapour resistance against ageing	*	*	*	Not more than ± 50% change	5.7.1	EN 1296 evaluation testing according to EN 1931	Pass

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

Property	Product type			Parameter	Clause in this document	Test method	Compliance criteria (where required)
	A	B	C				
Resistance to impact	*	*	*	MLV	5.6	EN 12691	Greater than or equal to MLV
Resistance to tear (Nail Shank) - unreinforced sheets - reinforced sheets	* *	* *	* *	MLV MLV	5.8 5.8	EN 12310-1 EN 13859-1	Greater than or equal to MLV
Joint strength	*	*	*	MLV	5.9	EN 12317-2	Greater than or equal to MLV
Resistance to deformation under load			*	MLV	5.13	Annex B	Greater than or equal to MLV
Resistance to alkali	*	-	*	Watertight at 2 kPa	5.7.2	EN 1847 (liquid 2) evaluation testing according to EN12311-2	Pass
Length	*	*	*	MDV	5.3	EN 1848-2	Within declared tolerance of the MDV
Width	*	*	*	MDV	5.3	EN 1848-2	Within declared tolerance of the MDV
Thickness	*	*	*	MDV	5.4	EN 1849-2	Within declared tolerance of the MDV
Mass	*	*	*	MDV	5.4	EN 1849-2	Within declared tolerance of the MDV
Straightness	*	*	*	Less than or equal to 75 mm/10 m	5.3	EN 1848-2	Pass
Dangerous substances	*	*	*	As relevant	5.14	As relevant	
Visible defects	*	*	*	Visible defects	5.2	EN 1850-2	No visible defects

7 Product data sheet and designation

The characteristics of the product shall be listed in a technical data sheet, an example of which is shown in Annex C. The technical data sheet shall give at least the following information:

a) product trade name and manufacturer's name;

b) origin/source of manufacture or traceable code;

c) method of application;

d) results from the tests in Table 1, as appropriate for the intended end use;

e) certification mark, if any;

f) consumer information, e.g. restrictions concerning use and storage and safety precautions during installation and disposal;

g) description of the product (e.g. type and number of carriers, type of coating, mass or thickness, type of surfacing).

8 Marking, labelling and packaging

The following information shall be indicated on each roll or at least on each consignment:

a) production date or identification number;

b) product trade name;

c) length and width;

d) thickness or mass;

e) labelling according to national regulations related to dangerous substances and/or health and safety;

f) type of product (Type A, Type B or Type V).

NOTE Where ZA.3 covers the same information as required by Clause 8, the requirements of this clause are met.

Annex A
(informative)

Product designation, typical materials and structure of sheets

A.1 Typical materials

A.1.1 General

Three groups of synthetic materials are used in the application of flexible sheets for waterproofing and vapour control layers: plastics, rubbers and thermoplastic rubbers.

Within these three groups there are various materials, which can be different in their nature and way of manufacturing. In the following there are listed some typical materials for the individual groups. Other materials may be possible, because this European Standard should not hinder further development.

A.1.2 Plastics

CSM	Chlorosulfonyl polyethylene
EEA	Ethylene/ethyl acetate Ethylene/ethyl acetate terpolymer (stated in full words)
EBA	Ethylene/butyl acetate
ECB	Ethylene, copolymer, bitumen
EVAC	Ethylene/vinyl acetate
FPO	Flexible polyolefin
FPP	Flexible polypropylene
PE	Polyethylene
PE-C	Chlorinated polyethylene
PIB	Polyisobutylene
PP	Polypropylene
PVC	Polyvinylchloride

A.1.3 Rubbers

BR	Butadiene rubber
CR	Chloroprene rubber
CSM	Chlorosulfonyl polyethylene rubber
EPDM	Terpolymer of ethylene, propylene and a diene with residual unsaturated portion of diene in the side chain
IIR	Isobutene-isoprene rubber (butyl rubber)
NBR	Acrylonitrile-butadiene rubber (nitrile rubber)

A.1.4 Thermoplastic rubbers

EA	Elastomeric alloys
MPR	Melt processible rubber
SEBS	Styrene ethylene butylene styrene
TPE-O	Thermoplastic elastomers, not cross-linked
TPE-V	Thermoplastic elastomers, cross-linked

Annex B
(normative)

Method of measuring the resistance of ventilating vapour control layers to deformation under load

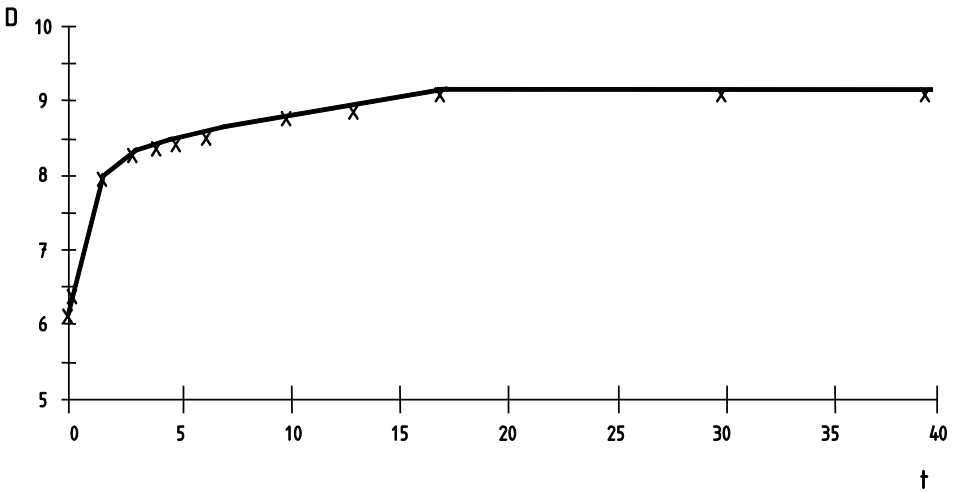
B.1 Principle

This is a method for the determination of the resistance to deformation under load of ventilating or draining thermoplastic damp proof sheets and water vapour control products. The method is intended for the initial testing and/or for quality control purposes. The purpose of the test is to determine the resistance to deformation under load of flexible profiled (non-flat) sheets for vapour control which in addition provide ventilation or drainage.

A conditioned test specimen is placed under a fixed load. Deformation is recorded as a function of time. The test is suitable for products, other than flat sheets, which experience plastic creep, i.e. the test measures the ability of the products to retain their shape under a long term fixed load.

A suitable fixed load is defined as the required design load, plus a factor of safety. The time period for testing is determined by assessment of the development of deformation with time in relation to both acceptable degree of deformation and expected life of product.

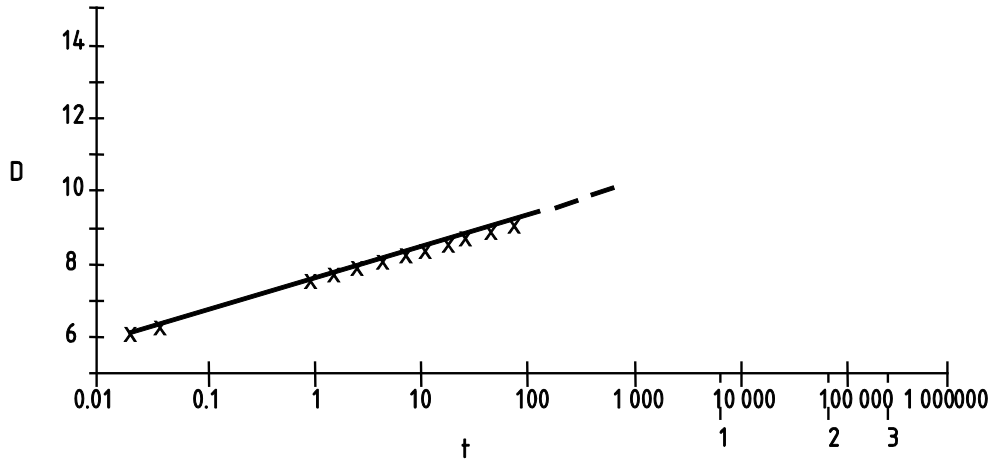
These factors are illustrated in Figures B.1 and B.2. Extrapolation shall not exceed one unit of logarithmic time and the extrapolated part of the data shall be clearly indicated by a dotted line.



Key

D deformation (%)
t time (h)

Figure B.1 — Typical curve for deformation against time



Key

D deformation (%)
t time
1 1 year
2 10 years
3 50 years

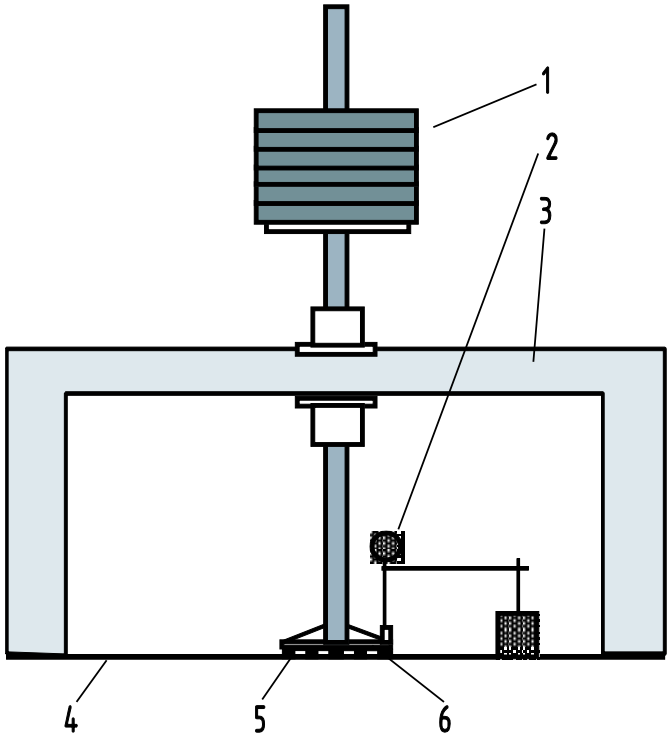
Figure B.2 — Typical logarithmic plot against time to determine deformation for design life

B.2 Apparatus

The specimen is placed between parallel rigid compression plates which distribute the load uniformly over the area of the specimen. Load may be applied by the use of physical weights or an alternative comparable method. Deformation is registered as a function of time. Preloading of the specimen prior to zeroing of deformation instrumentation may be applied to suit the product to be tested.

Zeroing of the deformation instrumentation shall be arranged such that any deformation prior to zeroing is either eliminated or negligible. Deformation is preferably measured direct on the pressure plate, or as close to the specimen as is practically possible, so that deformation errors in the apparatus are eliminated. Measuring instruments for deformation shall have a minimum accuracy of ± 0,02 mm. All measurements shall be recorded to the nearest 0,01 mm.

NOTE A typical test apparatus using physical weights is shown in Figure B.3.



Key

1 weights
2 measuring gauge
3 support frame
4 base plate
5 specimen
6 pressure plate

Figure B.3 — Typical test apparatus using physical weights

B.3 Preparation of test samples and test specimens

B.3.1 Sampling

Samples shall be taken in accordance with EN 13146.

B.3.2 Preparation of test specimens

Square or rectangular specimens of minimum dimension 120 mm shall be used, so that test results are representative for design loads and required performance of the product being tested.

NOTE Specimen minimum size may be confirmed as a function of profile height by type testing, so as to eliminate the effect of less resistance against load along the edge of the specimen.

Condition the test specimens for at least 24 h at (23 ± 2) °C.

B.4 Procedure

If results are to be presented as a percentage, measure the height of the product prior to commencement of loading. Determine the mean value for the specimen.

Measure the size of the specimen.

Carry out testing at a temperature of (23 ± 2) °C.

Place the specimen between the compression plates, apply preload where appropriate, and zero the deformation instrumentation. Apply the load as smoothly and as quickly as possible.

Subject the specimen to a constant static load over a period of time and a humidity of 50 % ± 20 % RH. If humidity has no influence on the property being examined, the relative humidity may be uncontrolled.

Measure deformation in millimetres as a function of time.

NOTE Generally, the greatest deformation takes place initially, and measurements are made at short time intervals. As increase in deformation reduces with time, the time intervals between measurements of deformation may be increased as the test progresses. See Figures B.1 and B.2.

B.5 Expression of results

Express deformation in millimetres or percentage of original product height for the given constant static load for the stated time. Express constant static load in kN/m^2, calculated from the given test load in relation to specimen size.

For initial type testing, a graph of deformation against time may be plotted. See Figures B.1 and B.2.

B.6 Test report

The test report shall include the following information:

a) details of the material;

b) test method;

c) test conditions (temperature, time);

d) special observations such as discoloration or deformations;

e) quantity of tested samples;

f) any deviations from this method;

g) test result: value of constant static load; specimen size; value of deformation at stated time interval for corresponding load per unit area;

h) the date of testing.

Annex C
(informative)

Example of product data sheet

C.1 General information

— date and reference of this technical data sheet;
— product trade name;
— manufacturer/supplier;
— origin/source of manufacturing;
— type of application;
— method of application;
— product performance[1)];
— certification mark if relevant;
— consumer information[2)].

Table C.1 — Example of information from testing

Characteristic	Test method	Units	Expression of result	Value or statement[a]
Water tightness to liquid water	EN 1928	-	Pass	
Tensile properties: maximum tensile force elongation	EN 12311-2	 N/50 mm %	 MLV MLV	
Durability of water vapour resistance against artificial ageing	EN 1296 and EN 1931	-	Pass	
Resistance to tear (nail shank)	EN 12310-1	N	MLV	
Impact resistance	EN 12691	mm	MLV	Method A or B
Joint strength	EN 12317-2	N/50 mm	MLV	
Water vapour transmission	EN 1931	$(m^2 \times s \times Pa)/kg$	MDV	
Resistance to deformation under load	Annex B	-	MLV	
Resistance to alkali	EN 1847(liquid 2) and EN 12311-2	-	Pass	
Reaction to fire	EN 13501-1	-	EN 13501-1 (see Note in 5.12)	
Length	EN 1848-2	m	MDV	
Width	EN 1848-2	m	MDV	
Thickness	EN 1849-2	mm	MDV	
Mass	EN 1849-2	kg/m^2	MDV	
Straightness	EN 1848-2	-	Pass	
Visible defects	EN 1850-2	-	Visible defects	
[a] To be completed by the manufacturer.				

1) As required by national regulations of countries where the product is used, e.g. health and safety data sheet.

2) E.g. restrictions concerning use and storage and safety precaution during installation and disposal.

Annex ZA
(informative)

Clauses of this European Standard addressing essential requirements or other provisions of EU Directives

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/102 Flexible sheets for waterproofing (as amended) by M 126, M 130 and M 137 given to CEN by the European Commission and the European Free Trade Association.

The clauses of this European Standard shown in this annex meet the requirements of the mandate given under the EU Construction Products Directive (89/106/EEC).

Compliance with these clauses confers a presumption of fitness of the underlay sheets covered by this annex for the intended uses indicated herein; reference shall be made to the information accompanying the CE marking.

WARNING: Other requirements and other EU Directives, not affecting the fitness for intended uses, can be applicable to the plastic and rubber sheets falling within the scope of this European Standard.

NOTE 1 In addition to any specific clauses relating to dangerous substances contained in this standard, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the EU Construction Products Directive, these requirements need also to be complied with, when and where they apply.

NOTE 2 An informative database of European and national provisions on dangerous substances is available at the Construction web site on EUROPA (accessed through http://ec.europa.eu/enterprise/construction/cpd-ds/).

This annex establishes the conditions for the CE marking of the plastic and rubber sheets intended for the uses indicated in Table ZA.1 and shows the relevant clauses applicable.

This annex has the same scope as the relevant part in Clause 1 of this standard related to the aspect covered by the mandate and is defined by Table ZA.1.

Table ZA.1 — Characteristics meeting Mandate M 102 and amendments and relevant clauses

Essential characteristics	Requirement Clauses in this European Standard *	Levels and/or classes	Notes
Water tightness	5.5	-	Threshold value*)
Resistance to impact	5.6		MLV
Durability ▪ water vapour resistance after artificial ageing	5.7.1	-	Threshold value*)
▪ Chemical resistance	5.7.2	-	Threshold value*)
Resistance to tearing	5.8		MLV
Joint strength	5.9		MLV
Water vapour resistance	5.10		MDV
Tensile properties	5.11	-	MLV
Reaction to fire	5.12	Classes in accordance with EN 13501-1	To comply with regulatory requirements
Dangerous substances	5.14	-	See relevant note in ZA.1
NOTE "-" means that no classes or levels are given by the mandate.			
* The requirement on a certain characteristic is not applicable in those Member States where there are no regulatory requirements on that characteristic for the intended end use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged to determine nor declare the performance of their products with regard to this characteristic and the option “No performance determined” (NPD) in the information accompanying the CE marking (see ZA.3) may be used. The NPD option may not be used, however, where the characteristic is subject to a threshold value.			

ZA.2 Procedures for attestation of conformity

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity of sheets for water vapour control layers for buildings indicated in Table ZA.1, in accordance with the Decision of the Commission 95/204/EC of 1995-05-31 amended by the Commission Decisions 99/90/EC of 1999-01-25 and 01/596/EC of 8 January 2001 and as given in Annex III of the Mandate M/102 (amended), are shown in Table ZA.2 for the indicated intended use and relevant classes.

Table ZA.2 — System of attestation of conformity

Products	Intended use(s)	Level(s) or class(es)	Attestation of conformity system(s)
Water vapour control layers [a]	In buildings	–	3
Water vapour control layers	For uses subject to reaction to fire regulations	A1 [(1)], A2 [(1)], B [(1)],C [(1)]	1
		A1 [(2)],A2 [(2)], B [(2)],C [(2)],D, E	3
		(A1 to E) [(3)], F	4
[(1)] Products/materials for which a clearly identifiable stage in the production process results in an improvement of the reaction to fire classification (e.g. an addition of fire retardants or a limiting of organic material). [(2)] Products/materials not covered by footnote [(1)]. [(3)] Products/materials that do not require to be tested for reaction to fire (e.g. Products/materials of Classes A1 according to Commission Decision 96/603/EC).			
System 1+: See Directive 89/106/EEC (CPD) Annex III.2.(i), with audit testing of samples. System 3: See Directive 89/106/EEC (CPD) Annex III.2.(ii), Second possibility. System 4: See Directive 89/106/EEC (CPD) Annex III.2.(ii), Third possibility.			
[a] Because all sheets have requirements on watertightness, all products covered by this standard come under attestation system 3. In case of additional requirements on reaction to fire the relevant system 1, 3 or 4 of attestation of conformity shall apply.			

For different possible combinations of intended uses the tasks of the attestation of conformity procedure for plastic and rubber, sheets in Table ZA.1 shall be in accordance with Tables ZA.3 to ZA.5 with reference to the applicable clauses of this European Standard.

Table ZA.3 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 and under system 1 for reaction to fire classes A1[(1)],A2[(1)],B[(1)],C[(1)]

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to essential characteristics of Table ZA.1 relevant for the intended use which are declared	6.3
	Further testing of samples taken at factory according to the prescribed test plan	Essential characteristics of Table ZA.1 relevant for the intended use which are declared	6.3
	Initial type testing	Essential characteristics of Table ZA.1 relevant for the intended use which are declared except water tightness, water vapour resistance and reaction to fire	6.2
Tasks under responsibility of a notified laboratory	Initial type testing	Water tightness, water vapour resistance	6.2
Tasks under the responsibility of the notified certification body	Initial type testing	Reaction to fire	6.2
	Initial inspection of factory and of FPC	Parameters related to essential characteristics of Table ZA.1, relevant for the intended use which is declared namely reaction to fire. Documentation of the FPC	6.3
	Continuous surveillance, assessment and approval of FPC	Parameters related to essential characteristics of Table ZA.1, relevant for the intended use which is declared namely reaction to fire	6.3

Table ZA.4 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 and under system 3 for reaction to fire classes A1 [(2)],A2 [(2)], B [(2)],C [(2)],D, E

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to essential characteristics of Table ZA.1 relevant for the intended use which are declared	6.3
	Initial type testing	Essential characteristics of Table ZA.1 relevant for the intended use which are declared except watertightness, water vapour resistance and reaction to fire	6.2
Tasks under responsibility of a notified laboratory	Initial type testing	Watertightness, water vapour resistance and reaction to fire	6.2

Table ZA.5 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 and under system 4 for reaction to fire classes (A1 to E) [(3)], F

Tasks		Content of the task	Evaluation of conformity clauses to apply
Tasks under the responsibility of the manufacturer	Factory production control (FPC)	Parameters related to essential characteristics of Table ZA.1 relevant for the intended use which are declared	6.3
	Initial type testing	Essential characteristics of Table ZA.1 relevant for the intended use which are declared except watertightness, water vapour resistance	6.2
Tasks under responsibility of a notified laboratory	Initial type testing	Watertightness, water vapour resistance	6.2

ZA.2.2 EC Certificate and Declaration of conformity

ZA.2.2.1 In case of products following Table ZA.3

When compliance with the conditions of this annex is achieved, the certification body shall draw up a certificate of conformity of the product (EC Certificate of conformity), which is related only to the reaction to fire characteristic. It includes the inspection and surveillance of factory production control for all characteristics of the product and entitles the manufacturer to affix the CE marking. The certificate shall include:

— name, address and identification number of the certification body,

— name and address of the manufacturer, or his authorised representative established in the EEA, and place of production,

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— description of the product (type, identification, use, ...),

— provisions to which the product conforms (i.e. Annex ZA of this European Standard),

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions),

— the number of the certificate,

— conditions of validity of the certificate, where applicable,

— name of, and position held by, the person empowered to sign the certificate.

In addition, the manufacturer shall draw up and retain a declaration of conformity (EC-Declaration of conformity) including the following:

— name and address of the manufacturer, or his authorised representative established in the EEA, and the place of production.

NOTE 2 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— name and address of the certification body,

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking,

NOTE 3 Where some of the information required for the Declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this European Standard), and a reference to the ITT report(s) and factory production control records (if appropriate),

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions),

— number of the accompanying EC Certificate of conformity,

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or of his authorised representative,

— name and address of the notified laboratory.

The above mentioned declaration and certificate shall be presented in the language or languages accepted in the Member State in which the product is to be used.

ZA.2.2.2 In case of products following Tables ZA.4 or ZA.5

When compliance with the conditions of this annex is achieved, and once the notified body has drawn up the certificate mentioned below, the manufacturer or his agent established in the EEA shall draw up and retain a declaration of conformity, which entitles the manufacturer to affix the CE marking. This declaration shall include:

— name and address of the manufacturer, or his authorised representative established in the EEA, and the place of production,

NOTE 1 The manufacturer may also be the person responsible for placing the product onto the EEA market, if he takes responsibility for CE marking.

— name and address of the notified test laboratory for testing as given in Table ZA.4,

— description of the product (type, identification, use, ...), and a copy of the information accompanying the CE marking as given in Tables ZA.4 and ZA.5,

NOTE 2 Where some of the information required for the Declaration is already given in the CE marking information, it does not need to be repeated.

— provisions to which the product conforms (i.e. Annex ZA of this European Standard), and a reference to the ITT report(s) and factory production control records (if appropriate),

— particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions),

— name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The above mentioned declaration shall be presented in the language or languages accepted in the Member State in which the product is to be used.

ZA.3 CE marking and labelling

The manufacturer or his authorised representative established within the EEA is responsible for the affixing of the CE marking. The CE marking symbol to affix shall be in accordance with Directive 93/68/EEC. The CE marking symbol, the name of the manufacturer, the last two digits of the year, the number of the EC product certificate (for products according Table ZA.3) and the information required by Clause 8 (except 8a)) shall be shown on a label attached to the product.

The CE marking symbol shall also appear on the accompanying commercial (technical) documentation, together with the following:

— the identification number of the product certification body (for products according Table ZA.3 only);

— name or identifying mark and registered address of the producer;

— the last two digits of the year in which the marking is affixed;

— the number of the product certificate (for products according Table ZA.3 only);

— reference to this European Standard (EN 13984) with date of version;

— a description of the product: the information required by Clause 8 (except 8a));

— the intended method of installation;

— information on the relevant characteristics in Table ZA.1, namely:

  — values and, where relevant, the class to declare for each relevant characteristic,

  — characteristics against which the “No performance determined” (NPD) option (or Class F for reaction to fire) is relevant.

The NPD option may be used when and where the characteristic, for a given intended use, is not subject to regulatory requirements.

Figure ZA.1 gives an example of the information to be given on the accompanying commercial documentation.

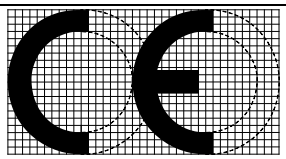
	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC*
AnyCo Ltd, PO Box 21, B-1050 **13**	*Name or identifying mark and registered address of the producer* *Last two digits of the year in which the marking was affixed* *Certificate number (where relevant)*
EN 13984:2013 CPE 2 mm Reaction to fire: Class E Tensile properties: Longitudinal strength: 125 N/50 mm Transverse strength: 125 N/50 mm Longitudinal elongation: 375 % Transverse elongation: 500 % Tear resistance: npd Joint strength: 450 N/50 mm Impact resistance: 10 mm (h = 300 mm) Water vapour resistance: 5 000 ($m^2 \times s \times Pa$)/kg Watertightness: Pass at 2 kPa Durability Against ageing: Pass Against alkali: Pass	*No. of European Standard with version date* *Description of product* *and* *information on regulated characteristics*

Figure ZA.1 — Example CE marking information to be given on the accompanying commercial (technical) documentation

In addition to any specific information relating to dangerous substances shown above, the product should also be accompanied, when and where required and in the appropriate form, by documentation listing any other legislation on dangerous substances for which compliance is claimed, together with any information required by that legislation.

NOTE 1 European legislation without national derogations need not be mentioned.

NOTE 2 Affixing the CE marking symbol means, if a product is subject to more than one directive, that it complies with all applicable directives.

Bibliography

[1] Essential Requirements (ER) n° 3 "Hygiene, health and environmental protection" of the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to constructions products (89/106/EEC).

[2] Essential Requirements (ER) nº 2 "Fire safety" of the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to constructions products (89/106/EEC).

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