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English Version

Flexible sheets for waterproofing - Plastic and rubber damp proof courses - Definitions and characteristics

Feuilles souples d'étanchéité - Feuilles plastiques et élastomères utilisées dans les murs contre les remontées d'humidité - Définitions et caractéristiques

Abdichtungsbahnen - Kunststoff- und Elastomer-Mauersperrbahnen - Definitionen und Eigenschaften

This European Standard was approved by CEN on 2 March 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 14909:2006) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2006, and conflicting national standards shall be withdrawn at the latest by October 2006.

This European Standard 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 European Standard.

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

Introduction

The purpose of damp proof courses is to prevent water rising up a wall from the ground, water moving from one part of a wall to another and to deflect water from an inner wall of a cavity wall construction to the exterior of the building. Damp proof courses may also be used in masonry chimneys and parapet walls to protect the inside of the building from water moving down from above.

They should be designed in conjunction with flashings and sheets for waterproofing, including roofing sheets and damp proof sheets, to ensure a continuous barrier and should deflect water to the exterior of a building so that it can drain away safely.

1 Scope

This European Standard specifies the characteristics of flexible sheets of plastics and rubber intended for use as damp proof courses for buildings. It specifies the requirements and test methods and provides for the evaluation of conformity of the products with the requirements of this European Standard.

This European Standard does not cover related products such as preformed cavity trays, coping and flashings.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 495-5, *Flexible sheets for waterproofing - Determination of foldability at low temperature - Part 5: Plastic and rubber sheets for roof waterproofing*

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 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 for roof waterproofing*

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

EN 1928, *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 12730, *Flexible sheets for waterproofing - Bitumen 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 13501-1:2002, *Fire classification of construction products and building elements - Part 1: Classification using test data from reaction to fire tests*

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

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 13416:2001 and the following apply.

3.1 waterproofing

action to prevent the passage of water from one plane to another

3.2 plastics and rubber damp proof course

flexible sheets of plastics or rubbers or composites based on these materials whose function is to prevent liquid water passing from one part of the wall to another (see Introduction). In composite sheets the plastic or rubber is the functional component

3.3 ventilating or draining damp proof course

flexible sheets conforming to the definition in 3.2 but with the ability to provide a continuous void or structure to allow free movement of water vapour or liquid water between the underside of the damp proof course and any further construction

3.4 manufacturer's limiting value MLV

value stated by the manufacturer to be met during testing. The manufacturer's limiting value can be a minimum or a maximum value according to statements made under product characteristics of this standard

3.5 manufacturer's declared value MDV

value declared by the manufacturer accompanied by a declared tolerance

3.6 plastic or rubber sheet

factory-made flexible membrane made from a plastic or rubber 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 damp proof sheets covered by this European Standard are designated as follows:

- TYPE A damp proof course;
- TYPE V damp proof course – ventilating or draining.

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 standard shall be started within one month of delivery of the product 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 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. 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).

5.5 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 it is not practicable to obtain a sample (see 5.2), 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 Watertightness

The product shall be watertight as determined by EN 1928 Method A with a pressure of 2 kPa and shall give a pass result.

5.7 Resistance to impact

The resistance to impact shall be evaluated when subject to regulatory requirements, and may be evaluated when not subject to such requirements. It shall be determined in accordance with EN 12691 and 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 Method A at a pressure of 2 kPa and shall give a pass result.

5.8.2 Against alkali

The durability against alkali shall be evaluated when subject to regulatory requirements, and may be evaluated when not subject to such requirements. It shall be determined in accordance with Annex C. The elongation shall be determined in accordance with EN 12311-2 and the value after ageing shall be not less than 50 % of the initial elongation.

5.9 Resistance to low temperature

The resistance to folding at low temperature shall be evaluated when subject to regulatory requirements, and may be evaluated when not subject to such requirements. It shall be determined in accordance with EN 495-5 and shall be less than or equal to the manufacturer's limiting value.

5.10 Resistance to tearing (nail shank)

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

5.11 Joint strength

Joint strength shall be evaluated when subject to regulatory requirements, and may be evaluated when not subject to such requirements. It 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, water vapour transmission properties shall be determined in accordance with EN 1931 and shall lie within the declared tolerance of the manufacturer's declared value.

5.13 Resistance to static loading

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

5.14 Resistance to deformation under load for type V

The resistance of type V damp proof courses 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.

5.15 Reaction to fire

Reaction to fire shall be evaluated when subject to regulatory requirements, and may be evaluated when not subject to such requirements. It shall be tested and classified in accordance with EN 13501-1:2002, Table 1. When tested according to EN ISO 11925-2, the products shall be tested under conditions of surface flame attack.

NOTE It is currently considered that the Euroclasses Classification system at Classes D and above requires investigation to determine its appropriateness to the products covered by this European 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 European Standard are tested to EN ISO 11925-2.

If and when a new fire test scenario and test method are developed for the products, this European Standard will be amended to refer to them.

5.16 Dangerous substances

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

6 Evaluation of conformity

6.1 General

The compliance of the product 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, including product assessment.

For the purposes of testing, products may be grouped into families, where it is considered that the results for a given characteristic from any one product within the family are representative for all other products within that family.

6.2 Initial 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).

The results of all initial type tests shall be held by the manufacturer for a period of at least ten years after the date of last production of the products to which they relate.

Table 1 — Compliance criteria for initial type testing

Property	Parameter	Test method	Clause in this European Standard	Compliance criteria (where required)
Visible defects	Visible defects	EN 1850-2	5.3	No visible defects
Length	Manufacturer's declared value	EN 1848-2	5.4	Within the declared tolerance of the MDV
Width	Manufacturer's declared value	EN 1848-2	5.4	Within the declared tolerance of the MDV
Straightness	75 mm/10 m	EN 1848-2	5.4	Pass
Thickness	Manufacturer's declared value	EN 1849-2	5.5	Within the declared tolerance of the MDV
Mass	Manufacturer's declared value	EN 1849-2	5.5	Within the declared tolerance of the MDV
Watertightness	Watertight at 2 kPa	EN 1928	5.6	Pass
Resistance to impact	Manufacturer's limiting value	EN 12691	5.7	Greater than or equal to MLV
Durability (artificial ageing)	Watertight at 2 kPa	EN 1296 test afterwards to EN 1928	5.8.1	Pass
Durability (alkali)	Elongation \geq 50 % of initial value	Annex C	5.8.2	Pass
Resistance to low temperature	Manufacturer's limiting value	EN 495-5	5.9	Less than or equal to MLV
Resistance to tearing (nail shank)	Manufacturer's declared value	EN 12310-1	5.10	Within the declared tolerance of the MDV
Joint strength	Manufacturer's limiting value	EN 12317-2	5.11	Greater than or equal to MLV
Water vapour transmission properties	Manufacturer's declared value	EN 1931	5.12	Within the declared tolerance of the MDV
Resistance to static loading	Manufacturer's limiting value	EN 12730	5.13	Greater than or equal to MLV
Resistance to deformation under load for type V	Manufacturer's limiting value	Annex B	5.14	Greater than or equal to MLV
Reaction to fire	Euroclass	EN 13501-1	5.15	Classification fulfilled

6.2.2 Sampling

Samples shall be taken according to EN 13416. The minimum number of tests to show compliance for initial type testing shall be one for all characteristics, unless a given test method specifies otherwise.

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 minimum frequencies of testing for factory production control are given in Table 2. All other relevant characteristics shall be controlled indirectly (e.g. by control of product composition).

Table 2 — Frequencies of testing for FPC

		Minimum frequencies of testing per			
		batch	week	month	year
5.3	Visible defects	1			
5.4	Length	1			
5.4	Width	1			
5.4	Straightness			1	
5.5	Thickness and mass per unit area	1			
5.10	Tear resistance ^a			1	
^a Only where declared.					

7 Product data sheet

The characteristics of the product, determined in accordance with the test methods specified in this European Standard, shall be listed in a technical data sheet, an example of which is shown in Annex D. 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) type of product (Type A or Type V);
- d) length and width;
- e) thickness or mass.
- f) labelling according to national regulations related to dangerous substances and/or health and safety.

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

Annex A (informative)

Product designation code

THERMOPLASTICS

EEA	– Ethylene / ethyl acrylate
EVAC	– Ethylene / vinyl acetate
ECB	– Ethylene, copolymer, bitumen
EBT	– Ethylene – Bitumen – Thermoplastic
PE	– Polyethylene
CPE	– Chlorinated polyethylene
PP	– Polypropylene
PIB	– Polyisobutylene
PVC	– Polyvinyl chloride
TPO	– Thermoplastic polyolefine
VET	– Vinyl ethylene terpolymer
FPO or PO-F	– Flexible Polyolefins

THERMOPLASTICS – ELASTOMERS

CSM	– Chlorosulfonated polyethylene
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ELASTOMERS

BR	– Butadiene rubber
CR	– Chloroprene rubber
EPDM	– Terpolymer of ethylene, propylene and diene with a residual un-separated portion of the polymerised diene in the side chain
IIR	– Isobutene-isoprene rubber (butyl rubber)
NBR	– Acrylonitrile-butadiene rubber (nitrile rubber)
POE	– Polyolefin elastomer

Annex B
(normative)

Method of testing the resistance of flexible ventilating damp proof membranes to deformation under load

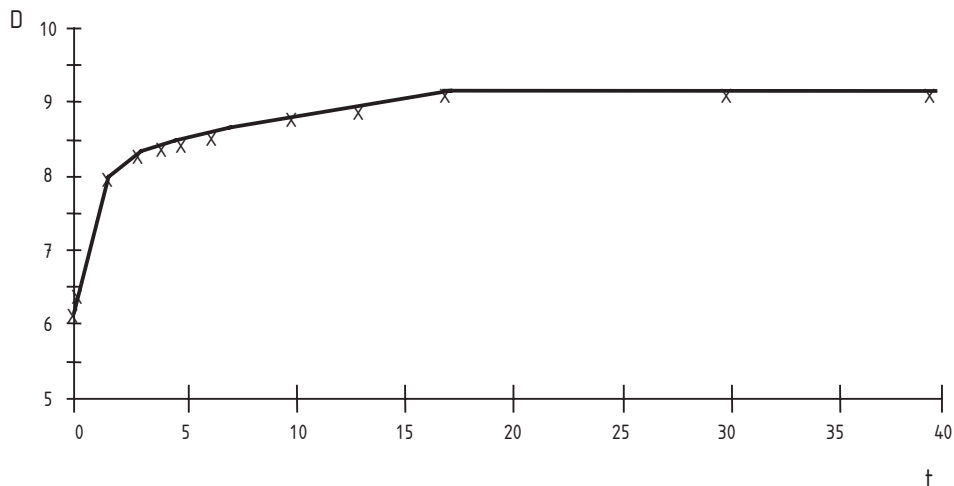
B.1 Principle

This is a method for the determination of the resistance of ventilating or draining thermoplastic damp proof sheets and water vapour control products to deformation under load. 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 damp protection which in addition provide ventilation or drainage to deformation under load.

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.

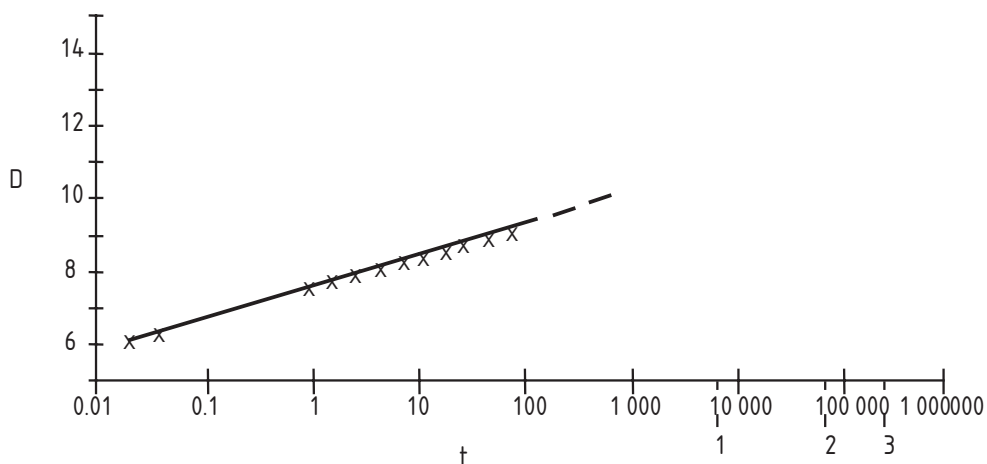
A suitable fixed load is defined as the required design load, plus a factor of safety. The time period for testing is determined by assessment of the development of deformation with time in relation to both acceptable degree of deformation and expected life of product.

The deformation against time is 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 h

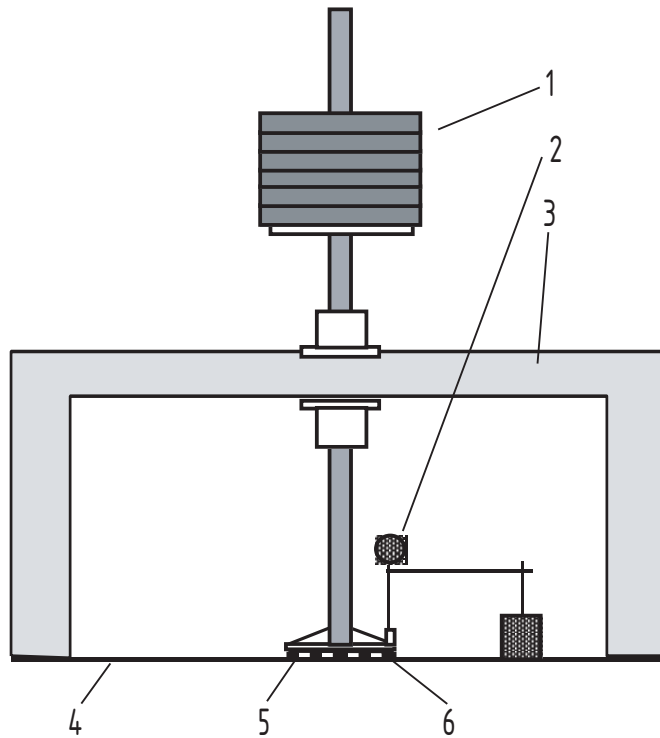
NOTE 1 = 1 year, 2 = 10 years, 3 = 50 years

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 $\pm 0,02$ 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 13416.

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 $(23 \pm 2) ^\circ\text{C}$.

B.4 Procedure

If results are to be presented as a percentage, measure the height of the product in at least four different positions 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 at (23 ± 2) °C 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.

NOTE 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 at least the following information:

- a) details of the plastic material;
- b) reference to this 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) date of testing.

Annex C (normative)

Method of testing for the accelerated ageing of damp proof sheets in an alkaline environment

C.1 Principle

This method is intended for use with plastics and rubber sheets, films and foils which may come into contact with moist concrete, for example, when used as damp proof sheets and courses and vapour control layers in concrete foundation slab construction.

Test specimens are held under load, in contact with a moist concrete surface at a constant elevated temperature for an agreed time. The reduction in mechanical and physical properties compared with the properties of the unexposed material are then determined.

C.2 Apparatus

C.2.1 A heating cabinet which can maintain a constant temperature of $(90 \pm 1) ^\circ\text{C}$.

C.2.2 Glass containers with tight fitting lids and minimum dimensions of 170 mm \times 140 mm \times 200 mm.

NOTE For materials to be tested in both directions, the use of containers which are twice as long and which can accommodate two concrete test blocks is recommended.

C.2.3 De-ionised water

C.2.4 Concrete blocks measuring 130 mm \times 110 mm \times 50 mm. They shall be prepared from freshly mixed concrete with a minimum strength of 25 N/mm². The concrete surface shall be even and free from loose particles.

NOTE The concrete blocks may be kept fresh by storing them in saturated calcium hydroxide solution.

C.3 Sampling and test specimens

Test samples shall be taken in accordance with EN 13416. The length and width of the test samples shall be at least 10 mm greater than the dimensions of the concrete block. Upon completion of the ageing process, test specimens are cut from the part of the test sample which has been in direct contact with the moist concrete.

C.4 Procedure

C.4.1 Accelerated ageing

Place one concrete block flat in each glass container and then fill it with de-ionised water to a level approximately 15 mm under the upper edge of the concrete block. Place a test sample on the surface of the concrete block. Clearly mark the machine and cross directions of the sample. Weigh a second concrete block and place it onto the test sample so that it covers the lower block. If necessary adjust the mass of the upper

concrete block to a total of 2000 g using small pieces of concrete. Cover the glass container with a glass lid and place in a heated cabinet at 90 °C for 24 weeks. Adjust the level of the water in the container as necessary using de-ionised water.

NOTE It is permissible to examine test samples visually at monthly intervals and measure its tensile properties at any sign of breakdown, such as holes, discoloration or cracking. However, failure to retain 50 % of initial elongation indicates that the product does not meet the requirements.

C.4.2 Evaluation

After completion of alkaline ageing rinse the test sample with de-ionised water and condition at (23 ± 2) °C and a humidity of $50 \% \pm 20 \%$ RH for 72 h before subsequent testing.

Carefully examine the aged material in accordance with EN 1850-2 prior to subsequent testing and note any signs of damage or deterioration, such as holes, cracks or discoloration. Cut test specimens for tensile testing from parts of the test specimen which have been in direct contact with the moist concrete but which are free from holes or cracks. Carry out tensile testing in both machine and cross directions in accordance with EN 12311-2.

If the tensile properties are measured at different time intervals, plot the test results against ageing time.

C.5 Test report

The test report shall include at least the following information:

- a) identification and description of the test material;
- b) reference to this test method;
- c) test conditions (temperature, time etc.);
- d) test results (e.g. changes in tensile properties);
- e) special observations such as discoloration, holes cracking or deformation;
- f) any deviations from this test method;
- g) date of testing.

Annex D
(informative)

Example of product data sheet

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 information¹⁾

Certification mark if relevant

Consumer information²⁾

Description of product (e.g. type of plastic or rubber)

1) See ZA.3 which limits the information to be given in association with the CE marking.

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

Table D.1 — Example of information from testing

Characteristic	Test method	Units	Expression of result	Value or statement ^a
Watertightness	EN 1928	–	Pass	
Resistance to static loading	EN 12730	kg	MLV	
Durability (artificial ageing)	EN 1296 and EN 1928	–	Pass	
Resistance to tear (nail shank)	EN 12310-1	N	MDV	
Resistance to impact loading	EN 12691	mm	MLV	
Joint strength	EN 12317-2	N/50 mm	MLV	
Water vapour transmission properties	EN 1931	(m ² ·s·Pa)/kg	MDV	
Resistance to deformation under load for type V	Annex B	–	MLV	
Durability (alkali)	Annex C, and EN 12113-2	–	Pass	
Reaction to fire	EN 13501-1:2002	–	EN 13501-1:2002 (see Note in 5.15)	
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	–	Pass	
^a To be completed by the manufacturer.				

Annex ZA (informative)

Clauses of this European Standard addressing the provisions of the EU Construction Products Directive

ZA.1 Scope and relevant characteristics

This European Standard has been prepared under Mandate M/102 Flexible sheets for waterproofing (as amended) 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 bitumen 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 products 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://europa.eu.int/comm/enterprise/construction/internal/dangsub/dangmain.htm>).

The following clauses of this European Standard meet the requirements of the Mandate M/102 and its amendments M/126 and M/130 given under the Council Directive of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products (89/106).

Clauses with reference to the mandate for membranes:

- Clause 1 Scope;
- Clause 2 Normative references regarding tests for mandated characteristics;
- Clause 3 Definitions;
- Clause 5 Product characteristics indicated in Table ZA.1;
- Clause 6 Evaluation of conformity.

Table ZA.1 — Characteristics meeting Mandate M/102 given under CPD

Essential characteristics	Requirement clauses in this EN	Levels and/or classes	Notes
Reaction to fire	5.15	Classes in accordance with EN 13501-1:2002 for which testing is required	See Note in 5.15
Watertightness	5.6	–	Threshold value
Resistance to impact	5.7	–	
Low temperature flexibility	5.9	–	
Durability	5.8.1	–	Durability against artificial ageing/degradation. Threshold value
	5.8.2	–	Durability against alkali. Pass
Dangerous substances	5.16	–	See relevant note in ZA.1
- means that no classes or levels are given by the mandate.			

The requirement on a certain characteristic is not applicable in those Member States (MSs) where there are no regulatory requirements on that characteristic for the intended use of the product. In this case, manufacturers placing their products on the market of these Member States are not obliged either to determine nor to 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. Class F is used instead of NPD in the case of reaction to fire. NPD may not be used, however, where the characteristic is subject to a threshold value.

ZA.2 Procedure(s) for attestation of conformity

ZA.2.1 Systems of attestation of conformity

The systems of attestation of conformity for plastics and rubber vapour damp proof courses indicated in Table ZA.1, in accordance with the Commission Decision 95/204/EC of the 14/06/1995, as amended by Decisions 99/90/EC of the 03/02/1999 and 2001/596/EC of the 02/08/2001, and as given in Annex III of the Mandate M/102 (amended) for “Flexible sheets for waterproofing”, are shown in Table ZA.2 for the indicated intended use and relevant classes.

Table ZA.2 — Systems of attestation of conformity

Product	Intended use	Level(s) or class(es)	Attestation of conformity system ¹⁾
Damp proof courses	Damp proof course subject to reaction to fire regulations	(A1, A2, B, C)*	1
		(A1, A2, B, C)**, D, E	3
		F	4
	Damp proof course	–	3

¹⁾ System 1: See Directive 89/106/EEC (CPD) Annex III.2(i) without audit-testing of samples.

System 3: See CPD Annex III.2(ii) second possibility without a continuous surveillance, assessment and approval of the factory production control by the approved body.

System 4: See CPD Annex III.2(ii) third possibility.

* 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 materials).

** Products/materials not covered by footnote (*).

NOTE Because all products require initial type testing of watertightness, the only systems which apply are 1 or 3. The inclusion of system 4 here indicates that no testing is required for reaction to fire Class F.

For products under attestation of conformity system 3, the characteristics reaction to fire and watertightness shall be subject to initial type testing by a notified test laboratory under the responsibility of the manufacturer.

Initial type testing of the relevant characteristics of Table ZA.1, carried out by the manufacturer, or by a notified test laboratory in the case of reaction to fire and watertightness, shall be in accordance with the provisions of 6.2.

The manufacturer shall operate a factory production control system in accordance with the provisions of 6.3. The systems of attestation of conformity are shown in Tables ZA 3.1 and ZA 3.2.

Table ZA.3.1 — Assignment of evaluation of conformity tasks for plastics and rubber damp proof courses under system 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 all characteristics of Table ZA.1 relevant for the intended use	6.3
	Initial type testing by the manufacturer	All relevant characteristics of Table ZA.1, relevant for the intended use, except reaction to fire and watertightness	6.2
	Initial type testing by a notified test lab	Watertightness	6.2
Tasks under the responsibility of the product certification body	Initial type testing	Reaction to fire Classes (A1, A2, B, C)*	6.3
	Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1, relevant for the intended use, in particular: reaction to fire	6.3
	Continuous surveillance, assessment and approval of FPC	Parameters related to all characteristics of Table ZA.1, relevant for the intended use, in particular: reaction to fire	6.2
* See * footnote in Table ZA.2.			

Table ZA.3.2 — Assignment of evaluation of conformity tasks for plastics and rubber damp proof courses under system 3

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 all characteristics of Table ZA.1 relevant for the intended use	6.3
	Initial type testing by the manufacturer	All relevant characteristics of Table ZA.1, relevant for the intended use, except reaction to fire and watertightness	6.2
	Initial type testing by a notified test laboratory	Reaction to fire (A1, A2, B, C)**, D, E (see Note in 5.15) and watertightness	6.2
** See ** footnote in Table ZA.2.			

ZA.2.2 EC Certificate and declaration of conformity

(For products under system 1) 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 prepare 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;
- description of the product (type, identification, use), and a copy of the information accompanying the CE marking;

NOTE 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 reference to ITT and FPC reports where appropriate;
- particular conditions applicable to the use of the product (e.g. provisions for use under certain conditions);
- the number of the accompanying product certificate;
- name of, and position held by, the person empowered to sign the declaration on behalf of the manufacturer or his authorised representative.

The declaration shall be accompanied by a product certificate, drawn up by the notified product certification body, which shall contain, in addition to the information above, the following:

- name, address and identification number of the notified body;
- the number of the product certificate;
- conditions of validity of the certificate, where applicable;
- name of, and position held by, the person empowered to sign the certificate.

(For products under system 3) When compliance with the conditions of this annex is achieved the manufacturer or his agent established in the EEA shall prepare 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;
- description of the product (type, identification, use), and a copy of the information accompanying the CE marking;

NOTE 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 reference to ITT and FPC reports where 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 and certificate, if relevant, 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/EC. The CE marking symbol and the information required by Clause 8 shall be shown on a label attached to the product.

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

- identification number of the product certification body (only products under system 1);
- 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 EC Product Certificate (only products under system 1);
- reference to this European Standard (EN 14909);
- a description of the product: the information required by Clause 8, e.g. type of carrier, type of coatings;
- type of surfacing, and 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 appropriate.

The “No performance determined” (NPD) option may not be used where the characteristic is subject to a threshold level. Otherwise 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.


 01234	<p><i>CE conformity marking, consisting of the “CE”-symbol given in Directive 93/68/EEC.</i></p> <p><i>Identification number of the certification body</i></p>
AnyCo Ltd, PO Box 21, B-1050 06	<p><i>Name or identifying mark and registered address of the producer</i></p> <p><i>Last two digits of the year in which the marking was affixed</i></p>
EN 14909 Damp proof course 2 mm PE Reaction to fire: F Watertightness: Pass Resistance to impact: 300 mm Resistance to low temperature: -20 °C Durability Against ageing: Pass Against alkali: Pass	<p><i>No. of European Standard</i></p> <p><i>Description of product and information on regulated characteristics</i></p>

Figure ZA.1 — Example CE marking information for a product in reaction to fire class F

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 European legislation without national derogations need not be mentioned.

Bibliography

- [1] Guidance Paper F "*Durability and the Construction Products Directive*"
- [2] Guidance Paper D "*CE marking under the Construction Products Directive*"
- [3] Guidance Paper H "*A harmonized approach to dangerous substances under the Construction Products Directive*"
- [4] 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)
- [5] Commission Decision 2000/553/EC, of 6 September 2000, implementing Council Directive 89/106/EEC as regards the external fire performance of roof coverings (notified under document number C (2000) 2266); Official Journal L 235, 19/09/2000p. 0019-0022
- [6] EN ISO 9001, *Quality management systems - Requirements (ISO 9001:2000)*