BS EN 14909:2012

BSI Standards Publication

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

bsi.

...making excellence a habit.™

National foreword

This British Standard is the UK implementation of EN 14909:2012. It supersedes BS EN 14909:2006 which is withdrawn.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.

Published by BSI Standards Limited 2012

ISBN 978 0 580 75819 5

ICS 01.040.91; 91.100.50

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 May 2012.

Amendments issued since publication

Date	Text affected

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14909

May 2012

ICS 01.040.91; 91.100.50

Supersedes EN 14909:2006

English Version

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

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

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

This European Standard was approved by CEN on 30 March 2012.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword

This document (EN 14909:2012) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14909:2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

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

The main technical changes are:

— the resistance to low temperature is only tested with the upper side in tension;

— the minimum tolerance for the water vapour transmission is fixed;

— the rules for mounting and fixing for reaction of fire testing are improved and the variation of products where a result apply are fixed;

— for FPC the indirect testing as in other TC 254 standards is introduced.

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

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

EN 12691, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to impact*

EN 12730, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Determination of resistance to static loading*

EN 13416:2001, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling*

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

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

3 Terms and definitions

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

3.1
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)

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 that is stated by the manufacturer to be met during testing and that 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

3.11
batch
amount of product continuously manufactured to the same specification

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 1928:2000 Method A with a pressure of 2 kPa and shall give a pass result.

5.7 Resistance to impact

Where required resistance to impact 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 1928:2000 Method A at a pressure of 2 kPa and shall give a pass result.

5.8.2 Against alkali

Where required in order to verify the durability of the products the sheet shall be tested before and after exposure to chemicals in accordance with EN 1847. The sheet shall be watertight as determined in accordance with EN 1928:2000 Method A or B, with a pressure of 2 kPa pressure before and after long term exposure to alkali in accordance with EN 1847 (milk of lime), 28 days, 23°C.

5.9 Resistance to low temperature

Where required folding at low temperature shall be determined in accordance with EN 495-5 and shall be less than or equal to the manufacturer’s limiting value. If the manufacturer defines a top side only the top surface (the upper side of the sheet as used in-situ) shall be tested.

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

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

5.12 Water vapour transmission properties

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

5.13 Resistance to static loading

The resistance to static loading shall be determined in accordance with 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

Where required, the product shall be tested and classified in accordance with EN 13501-1:2007+A1:2009, Table 1. According to EN ISO 11925-2, the test is required to be undertaken on the exposed surface of the delivered flexible sheet membrane (surface exposure) free hanging without any substrate in one direction only, 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 colors (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 150g/m^2) or any additional inorganic layer.

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

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

NOTE 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

NOTE For products placed on the market within the European Economic Area, see ZA.1.

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.

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)	Watertight at 2kPa	EN 1847 test liquid 2 afterwards EN 1928:2000 method A	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.

An FPC system conforming with the requirements of EN ISO 9001, and made specific to the requirements of this standard, is considered to satisfy the above requirements.

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 FPC system.

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 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) 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.

NOTE 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

NOTE The abbreviations listed in Annex A are commonly used in the single ply roofing and waterproofing industry and for the national application standards of flexible sheets for waterproofing

a) THERMOPLASTICS

EEA – Ethylene / ethyl acrylate

EVAC – Ethylene / vinyl acetate

ECB – Ethylene, copolymer, bitumen

PE – Polyethylene

CPE – Chlorinated polyethylene

PP – Polypropylene

PIB – Polyisobutylene

PVC – Polyvinyl chloride

TPO – Thermoplastic polyolefine

FPO or PO-F– Flexible Polyolefins

b) THERMOPLASTICS – ELASTOMERS

CSM – Chlorosulfonated polyethylene

c) 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

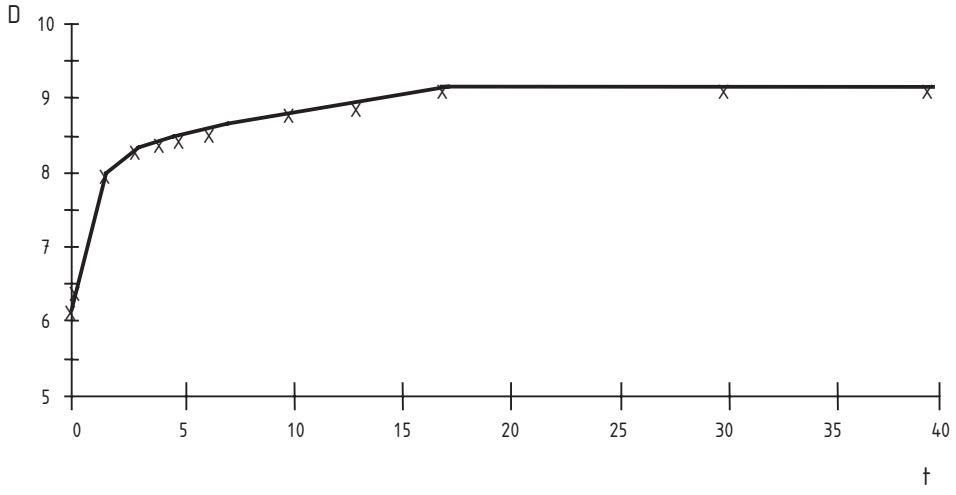
B.1 Principle

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.

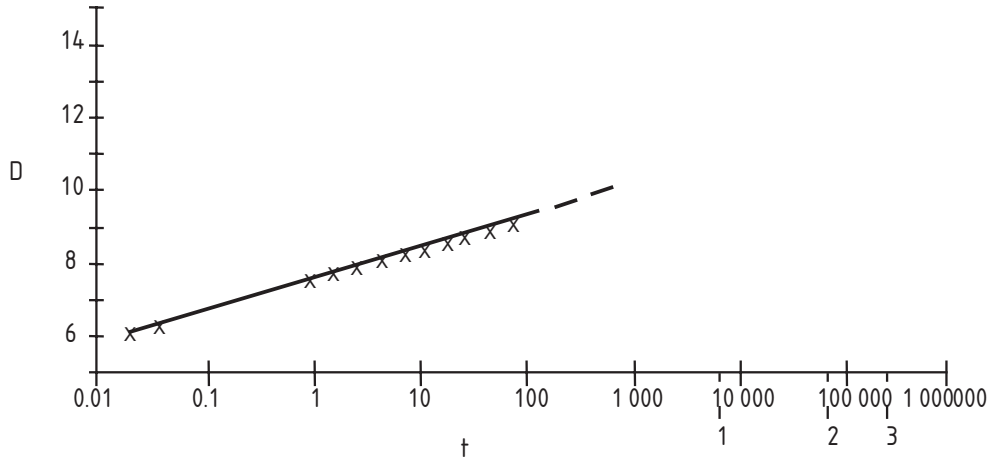
A suitable fixed load is defined as the required design load, plus a factor of safety. The time period for testing is determined by assessment of the development of deformation with time in relation to both acceptable degree of deformation and expected life of product.

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.

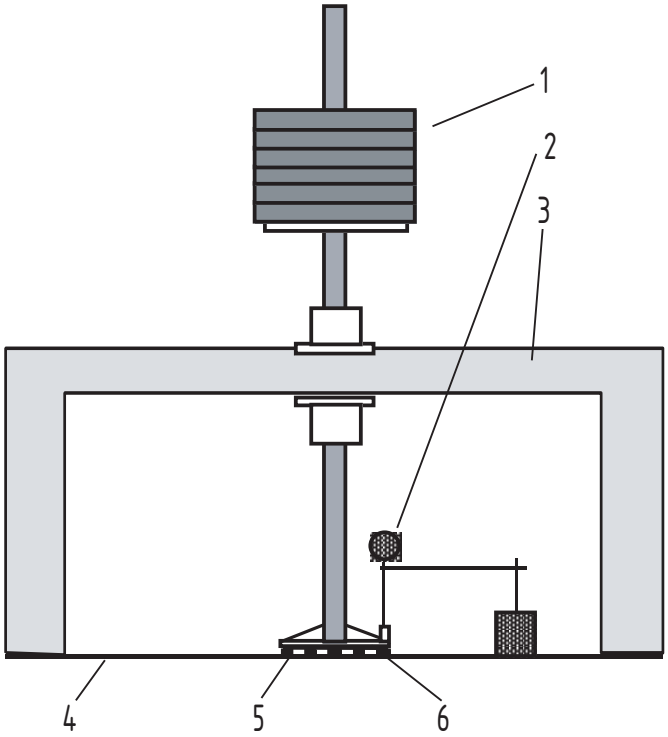
Figure B.2 — Typical logarithmic plot against time to determine deformation for design life

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 ± 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 ± 2) °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
(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 information[1)]

Certification mark if relevant

Consumer information[2)]

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 C.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	$(m^2 \cdot s \cdot Pa)/kg$	MDV	
Resistance to deformation under load for type V	Annex B	–	MLV	
Durability (alkali)	EN 1847 (liquid 2) and EN 1928	–	Pass	
Reaction to fire	EN 13501-1	–	EN 13501-1 (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) 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 flexible sheets for waterproofing 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 flexible sheets for waterproofing 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 flexible sheets for waterproofing 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

Construction product:	Plastic and rubber sheets		
Intended uses:	Damp proof courses in buildings		
Essential characteristics	**Requirement Clauses in this Europen Standard*)**	**Levels and/or classes**	**Notes**
Watertightness	5.6	–	Threshold value*)
Resistance to impact	5.7	–	MLV
Durability ▪ watertightness after artificial ageing	5.8.1	–	Threshold value*)
▪ Alkali resistance	5.8.2	–	Threshold value*)
Resistance to low temperature	5.9	–	MLV
Reaction to fire	5.15	Classes in accordance with EN 13501-1 for which testing is required	To comply with regulatory requirements
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 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

Product	**Intended use**	**Levels or classes**	**Attestation of conformity system[a]**
plastic and rubber sheets	Damp proof courses in buildings subject to reaction to fire regulations	A1([1]), A2([1]), B([1]), C([1])	1
		A1([2]), A2([2]), B([2]),C([2]), D and E	3
		(A1 to E) ([3]) and F	4
	Damp proof courses in buildings [b]	-	3

([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 Class A1 according to Commission Decision 96/603/EC, as amended).

[a] System 1: See Directive 89/106/EEC (CPD) Annex III.2.(i), without 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.

[b] 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 attestation of conformity systems 1, 3 or 4 shall additionally 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.3.1 to ZA.3.3 with reference to the applicable clauses of this European Standard.

Table ZA.3.1 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 for damp proof courses and 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 all characteristics of Table ZA.1	6.3
	Further Testing of samples taken at the factory		Reaction to fire classes A1 ([1]), A2([1]), B([1]), C([1]) of Table ZA.1	6.3
	Initial type testing		All characteristics of Table ZA.1 except watertightness, and reaction to fire	6.2
Tasks under the responsibility of a notified laboratory	Initial type testing		Watertightness of Table ZA.1	6.2
Tasks under the responsibility of the product certification body	Certification of the conformity of the product on basis of:	Initial type testing	Reaction to fire classes A1 ([1]), A2([1]), B([1]), C([1]) of Table ZA.1	6.2
		Initial inspection of factory and of FPC	Parameters related to all characteristics of Table ZA.1, in particular reaction to fire	6.3
		Continuous surveillance, assessment and approval of FPC	Parameters related to all characteristics of Table ZA.1, in particular reaction to fire	6.3

Table ZA.3.2 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 for damp proof courses and system 3 for reaction to fire classes A1([2]), A2([2]), B([2]), C([2]), D and 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 all characteristics of Table ZA.1	6.3
	Initial type testing	All characteristics of Table ZA.1 except watertightness, and reaction to fire	6.2
Tasks under the responsibility of a notified laboratory	Initial type testing	Watertightness, and reaction to fire classes A1([2]), A2([2]), B([2]),C([2]), D and E of Table ZA.1	6.2

Table ZA.3.3 — Assignment of evaluation of conformity tasks for plastic and rubber sheets under system 3 for water vapour control layers and system 4 for reaction to fire classes (A1 to E) ([3]) and 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 all characteristics of Table ZA.1	6.3
	Initial type testing	All characteristics of Table ZA.1 except watertightness, and reaction to fire	6.2
Tasks under the responsibility of a notified laboratory	Initial type testing	Watertightness of Table ZA.1	6.2

ZA.2.2 EC Certificate and Declaration of conformity

ZA.2.2.1 In case of products following Table ZA.3.1

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 and 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 EN),

— 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 EN), 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.

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.3.2 or ZA.3.3

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.3.2

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

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 EN), 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 number of the EC product certificate (for products according Table ZA.3.1) 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:

a) the identification number of the product certification body (for products according Table ZA.3.1 only);

b) name or identifying mark and registered address of the producer;

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

d) the number of the product certificate (for products according Table ZA.3.1 only);

e) reference to this European Standard (EN 14909) with date of version;

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

g) the intended method of installation;

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

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

   2) 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 01234	*CE conformity marking, consisting of the "CE"-symbol given in Directive 93/68/EEC.* *Identification number of the certification body*
AnyCo Ltd, PO Box 21, B-1050 **06**	*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 14909:2012 **Damp proof course 2 mm PE** Reaction to fire: Class E Watertightness: Pass Resistance to impact: npd Resistance to low temperature: -20 °C Durability against ageing: Pass against alkali: Pass	*No. of European Standard with date of version* *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] EN ISO 9001, *Quality management systems — Requirements (ISO 9001)*

[2] Guidance Paper D "*CE marking under the Construction Products Directive*"

[3] Guidance Paper F "*Durability and the Construction Products Directive*"

[4] Guidance Paper H "*A Harmonised Approach to dangerous substances under the Construction Products Directive*"

[5] 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)

[6] 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, 19/09/2000, p. 19-22

This page deliberately left blank

This page deliberately left blank

British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards -based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at bsigroup.com/standards or contacting our Customer Services team or Knowledge Centre.

Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at bsigroup.com/shop, where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to bsigroup.com/subscriptions.

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

PLUS is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit bsigroup.com/shop.

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email bsmusales@bsigroup.com.

BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK

Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

Copyright

Useful Contacts:

Customer Services
Tel: +44 845 086 9001
Email (orders): orders@bsigroup.com
Email (enquiries): cservices@bsigroup.com

Subscriptions
Tel: +44 845 086 9001
Email: subscriptions@bsigroup.com

Knowledge Centre
Tel: +44 20 8996 7004
Email: knowledgecentre@bsigroup.com

Copyright & Licensing
Tel: +44 20 8996 7070
Email: copyright@bsigroup.com

bsi.

...making excellence a habit.™