BRITISH STANDARD

BS EN
1296:2001

Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roofing — Method of artificial ageing by long term exposure to elevated temperature

The European Standard EN 1296:2000 has the status of a British Standard

ICS 91.100.50

National foreword

This British Standard is the official English language version of EN 1296:2000.

The UK participation in its preparation was entrusted by Technical Committee B/546, Flexible sheets for waterproofing, to Subcommittee B/546/2, Roof sheeting and sealing sheeting, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 6, an inside back cover and a back cover.

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Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roofing — Method of artificial ageing by long term exposure to elevated temperature

Feuilles souples d'étanchéité — Feuilles d'étanchéité de toiture bitumeuses, plastiques et élastomères — Méthode de vieillissement artificiel par exposition de longue durée à température élevée

Abdichtungsbahnen — Bitumen-, Kunststoff- und Elastomerbahnen für Dachabdichtungen — Verfahren zur Künstlichen Alterung bei Dauerbeanspruchung durch erhöhte Temperatur

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard 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of an identical text or by endorsement, at the latest by June 2001, and conflicting national standards shall be withdrawn at the latest by June 2001.

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

Annex A is normative.

Introduction

This European Standard is intended for characterization of bitumen, plastic and rubber sheets as manufactured or supplied before use. This test method relates exclusively to products or to their components where appropriate, and not to waterproofing membrane systems composed of such products and installed in the works.

This test method is intended to be used in conjunction with the relevant European Standards on definition and characteristics for bitumen, plastic and rubber sheets.

1 Scope

This European Standard describes the principles, the apparatus and the procedure related to artificial ageing by the use of thermal ageing by long term exposure in a ventilated oven at elevated temperature.

2 Normative references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references, the latest editions of the publication referred to apply (including amendments).

EN 1850-1, *Flexible sheets for waterproofing — Determination of visible defects — Part 1: Bitumen sheets for roof waterproofing*

prEN 1850-2:2000, *Flexible sheets for waterproofing — Determination of visible defects — Part 2: Plastic and rubber sheets for roof waterproofing*

prEN 13416:1998, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling*

3 Terms and definitions

For the purposes of this standard, the terms and definitions in prEN 13416:1998 and the following apply.

3.1
top surface
upper side of the sheet, as used in situ or as indicated by the manufacturer. It is usually the inside of the roll

4 Principle

Samples for assessment are stored up to 24 weeks at elevated temperature. The evaluations to be performed before and after thermal ageing and the exposure duration are defined in the relevant European Standards on definition and characteristics for bitumen, plastic and rubber sheets.

5 Apparatus

Ventilated air oven, regulated in such a way that the test specimen can be maintained at a constant temperature of (70 ± 2) °C during the full test duration. The temperature calibration procedure is described in A.1. Details on the air flow are given in A.2.

6 Sampling

Samples shall be taken in accordance with prEN 13416:1998.

7 Test specimens

Test pieces of sufficient size and number shall be taken from the samples to allow the evaluation tests to be performed.

To avoid edge effects test specimens for the evaluation tests are cut from test pieces only after thermal treatment.

Normally, initial evaluation tests are performed before exposure. If this is not the case sufficient reference material shall be stored in dark conditions at (23 ± 2) °C and (50 ± 10) % relative humidity for the evaluation testing at the same time as the exposed material.

8 Procedure

Set the oven to maintain a temperature of (70 ± 2) °C.

Lay down the test specimens horizontally in the oven, their top face being exposed to the air. The bottom face shall lay on an anti-adhesive and continuous support, normally a sheet of siliconized paper.

The exposure duration is defined by the relevant product specification. It shall lie in the range indicated in Table 1.

Table 1 — Exposure duration

4	8	16	24	Weeks

For sheets used in exposed applications the preferred duration is 24 weeks.

After exposure specimens are stored for at least 24 h at (23 ± 2) °C and (50 ± 10) % relative humidity before evaluation tests are performed.

Samples shall be inspected visually before and after thermal exposure. Definitions of visible defects are given in EN 1850-1 and prEN 1850-2:2000.

9 Expression of results and precision

9.1 Expression of results

Visible changes of the samples shall be reported. The expression of all other results shall be in accordance with the European Standards specifying the evaluation test methods.

9.2 Precision

Precision is not defined by this standard.

NOTE This method only describes an exposure procedure and does not produce data values. Precision is dependent on evaluation tests.

10 Test report

The test report shall include at least the following information:

a) all details necessary to identify the product tested;

b) reference to this European Standard (EN 1296) and any deviation from it;

c) information on sampling in accordance with clause 6;

d) information on the preparation of the test specimens in accordance with clause 7;

e) information on the procedure in accordance with clause 8, including the applied exposure duration;

f) test results in accordance with clause 9;

g) date of the test.

Annex A
(normative)
Oven calibration procedure

A.1 Temperature calibration

Thermocouples having a minimum precision of 0,2 °C in the range from 60 °C to 80 °C are used for checking the oven. This verification shall be made at least once a year at the working temperature of 70 °C at three points: a point in the horizontal plane of respectively the upper, lower and central test specimen supports, each point being selected randomly in the work area of the aforementioned horizontal plane. The measurement of the temperature at these three points is carried out continuously for a period of 2 h. The temperature readings at each of these points shall not exceed the range of (70 ± 2) °C during the measurement period.

This calibration procedure shall be carried out under test conditions, i.e. with test specimens in place.

A.2 Ventilation calibration

Ventilation calibration is carried out by the manufacturer of the oven. To maintain constant exposure conditions the oven shall always be fully loaded, using dummy specimens of the same material type as the test specimens if necessary.

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