BRITISH STANDARD

BS EN
12310-2:2000

Flexible sheets for waterproofing — Determination of resistance to tearing —

Part 2: Plastic and rubber sheets for roof waterproofing

The European Standard EN 12310-2:2000 has the status of a British Standard

ICS 91.100.50

National foreword

This British Standard is the official English language version of EN 12310-2:2000.

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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The British Standards which implement international or European publications referred to in this document may be found in the BSI Standards Catalogue under the section entitled "International Standards Correspondence Index", or by using the "Find" facility of the BSI Standards Electronic Catalogue.

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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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EUROPEAN STANDARD

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English version

Flexible sheets for waterproofing - Determination of resistance to tearing - Part 2: Plastic and rubber sheets for roof waterproofing

Feuilles souples d'étanchéité - Détermination de la résistance à la déchirure - Partie 2: Feuilles d'étanchéité de toiture plastiques et élastomères

Abdichtungsbahnen - Bestimmung des Widerstandes gegen Weiterreißen - Teil 2: Kunststoff- und Elastomerbahnen für Dachabdichtungen

This European Standard was approved by CEN on 17 August 2000.

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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Ref. No. EN 12310-2:2000 E

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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 March 2001, and conflicting national standards shall be withdrawn at the latest by March 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.

Introduction

This European Standard is intended for characterisation of 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 is intended to be used in conjunction with European Standard "Definitions and Characteristics" for plastic and rubber sheets for roof waterproofing.

1 Scope

This European Standard specifies a method for the determination of tear properties of plastic and rubber sheets for roof waterproofing using a trapezoidal test specimen with a nick or cut.

2 Normative references

This European Standard incorporates, by dated or undated references, 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.

EN ISO 7500-1	Metallic materials – Verification of static uniaxial testing machines - Part 1: Tension/ compression testing machines (ISO 7500-1:1999)
prEN 13416:2000	Flexible sheets for waterproofing – Bitumen, plastic and rubber sheets for roof waterproofing – Rules for sampling

3 Definition

For the purpose of this standard, the following definition applies:

3.1 Resistance to tearing: The maximum tensile force required to tear a pre-cut test specimen.

4 Principle

The principle of the test is measurement of the force required to completely tear the test specimen, in continuation of the cut or nick already produced in the test specimen.

The tearing force is applied by means of a tensile testing machine at a constant speed until the test specimen breaks. The maximum peak force achieved is reported.

5 Apparatus

Tensile testing machine equipped with a continuous recording of force and corresponding extension and capable of maintaining a uniform speed of grip separation as specified below.

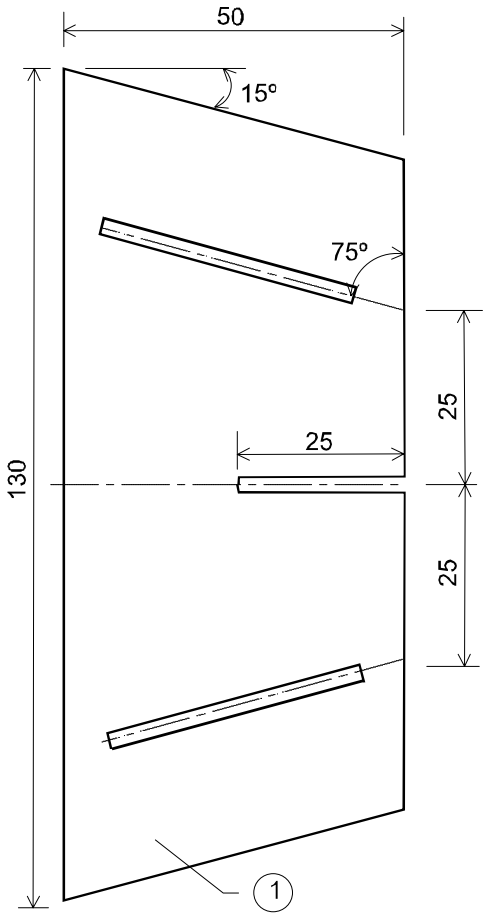
The tensile testing machine shall have a sufficient loading capacity of at least 2000 N and a grip separation speed of (100 ± 10) mm per min. The width of grips shall not be less than 50 mm.

The tensile testing machine shall be equipped with grips of a type which maintain or increase the clamping pressure as a function of the increase of the force applied to the test specimen. The test specimen shall be held so that it does not slip in the grips more than 1 mm for products up to and including 3 mm thick, and 2 mm for thicker products. A mark or tape on the test specimen where it enters the grips will help reveal any slip.

The force measuring system shall meet at least Class 2 of EN ISO 7500-1 (i.e. ± 2%)

The template used for cutting the test specimens shall have dimensions as shown in Figure 1.

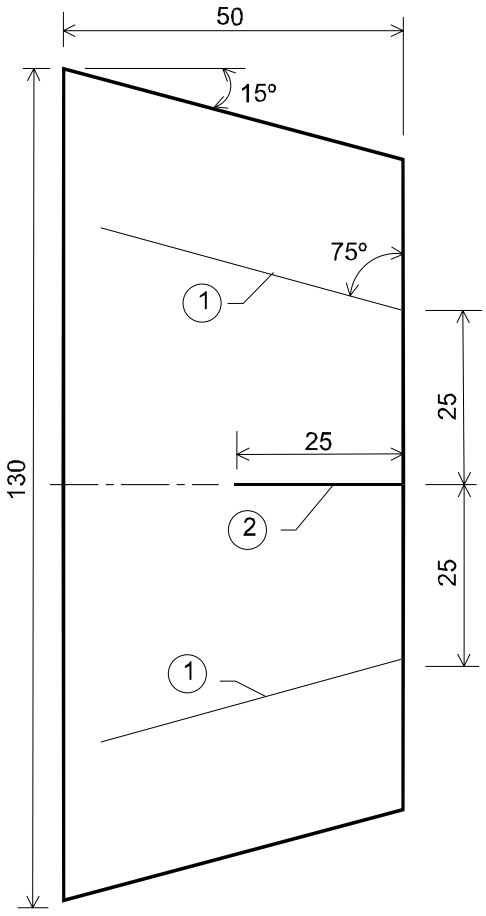
Dimensions in millimetres



Key

1 Template thickness: 2 to 3 mm

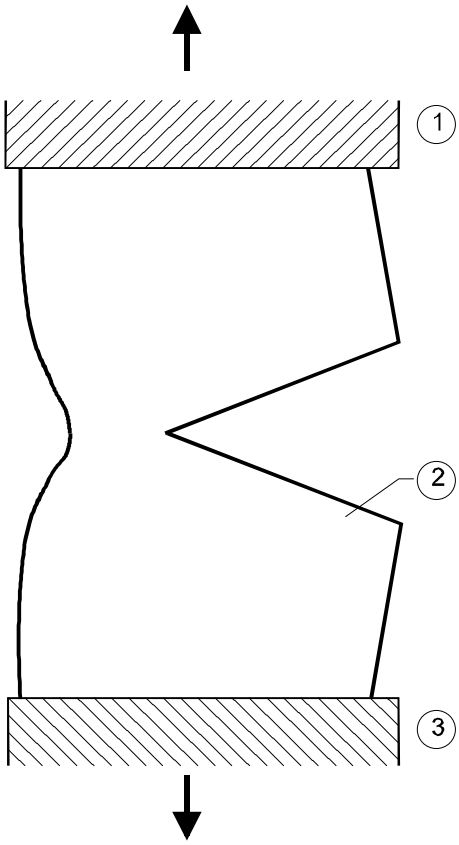
Figure 1 - Template for cutting the test specimen



Key

1 Line for grip
2 Nick or cut

Figure 2 - Shape and dimension of the test specimen



Key

1 Upper grip
2 Test specimen
3 Lower grip

Figure 3 - Test specimen mounted in the grips

6 Sampling

Samples shall be taken in accordance with prEN 13416:2000.

7 Preparation of test specimens

The shape and dimensions of the test specimens are given in Figure 2.

The angle α shall be produced with an accuracy of 1°.

Using the template cut five specimens with the nick or cut in the longitudinal direction and five with the nick or cut in the transversal direction of the sheet.

Mark on every test specimen the lines indicating the position of the grips.

Condition the test specimens, prior to testing, for at least 20 h in a standard atmosphere of (23 ± 2) °C and (50 ± 5) % relative humidity.

8 Procedure

The test specimen shall be tightly clamped in the tensile testing machine grips (clause 5) taking care that the lines are aligned with the front edge of the grips (see Figure 3).

The test is carried out on a test specimen at a temperature of (23 ± 2)°C and at a constant separating speed for the grips of (100 ± 10) mm/min.

The maximum applied tensile force shall be recorded for each test specimen.

9 Expression of results

9.1 Evaluation

State for each test specimen the maximum force in Newton.

Disregard any result where the test specimen slips by more than the permitted limit within the grips of the tensile testing machine, and retest with a replacement specimen.

Calculate for each direction the arithmetic mean tear force ($\overline{F}_L$ and $\overline{F}_T$) in Newton and state the result to the nearest Newton.

9.2 Precision of the test method

No information is available at this time.

10 Test report

The test report shall include the following information:

a) a reference to this European Standard (EN 12310-2) and any deviation from it;
b) all details necessary to identify the product tested;
c) information on sampling in accordance with clause 6;
d) details of preparation of the test specimen in accordance with clause 7;
e) the test results in accordance with clause 9 ;
f) any peculiarities in the method employed or encountered during the test;
g) the date of the test(s).

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