

English Version

Flexible sheets for waterproofing - Underlays for discontinuous roofing and walls - Determination of resistance to water penetration

Feuilles souples d'étanchéité - Ecrans de sous-toiture et pare-pluie pour murs - Détermination de la résistance à la pénétration de l'eau

Abdichtungsbahnen - Unterdeck- und Unterspannbahnen für Dachdeckungen und Wände - Bestimmung des Widerstandes gegen Wasserdurchgang

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Foreword

This document (EN 13111:2010) 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of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

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Introduction

This European Standard is one of a series of standards which specify test methods for the characterization and/or classification of industrially manufactured underlays. The methods of test relate to products exclusively.

This document applies in conjunction with European Standards specifying definitions and characteristics on underlays for discontinuous roofing and walls.

1 Scope

This European Standard specifies a method to test the resistance against water penetration of underlays for discontinuous roofing and for walls.

2 Normative references

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

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

3 Terms and definitions

For the purposes of this document, the terms and definitions indicated in the corresponding European Standards specifying definitions and characteristics on underlays for discontinuous roofing and walls apply.

4 Principle

Test specimens of the sheet are subjected to a waterhead and the volume of penetrating water is measured.

A conditioned test specimen is positioned as a water-carrying layer into a device with flange and defined basic surface.

Water occasionally penetrating the test specimen will be collected in a basin positioned under the testing apparatus and volumetrically measured at the end of the test.

5 Apparatus

The apparatus is shown in Figure 1 and Table 1.

The test container can have two different inside dimensions with the same test area of 0,045 m²:

- a) $(300 \pm 1) \text{ mm} \times (150 \pm 1) \text{ mm}$; or
- b) $(250 \pm 1) \text{ mm} \times (180 \pm 1) \text{ mm}$.

It is equipped with a flange and a counter frame incorporating a suitable seal.

At the inside of the container, an inclined plane of $(45 \pm 2)^\circ$ towards the longitudinal side of the basin is positioned to achieve a defined filling process of the required water quantity. The inclined plane is only attached at the latitudinal sides of 150 mm or 180 mm for containers a) and b) respectively and therefore forms a slot of $(0,5_{-0,1}^{+0}) \text{ mm}$ towards the longitudinal side.

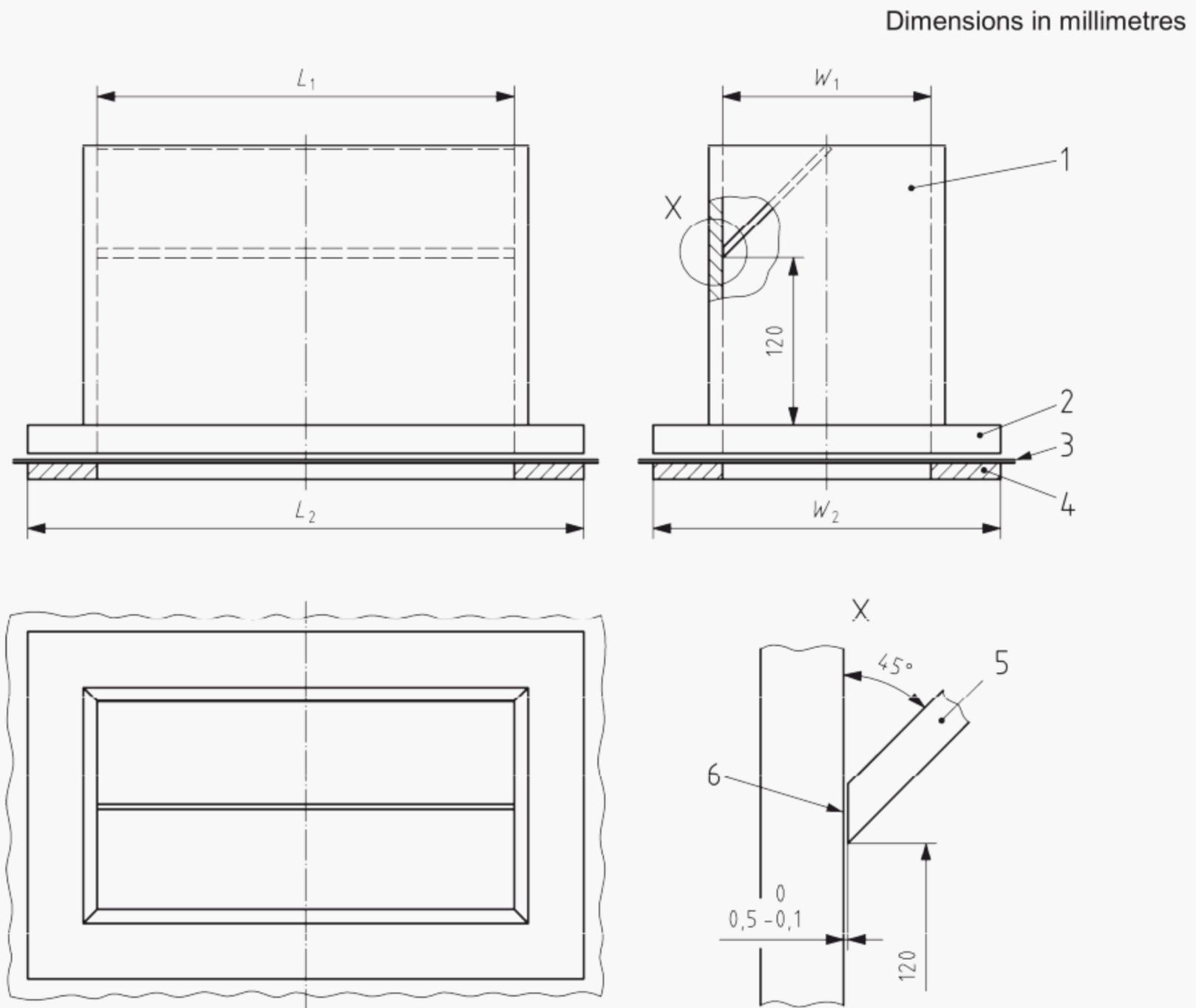
6 Sampling and preparation of test specimens

6.1 Sampling

Test samples shall be taken in accordance with EN 13416. Samples with extraordinary defects shall not be used for testing.

6.2 Preparation of test specimens

Three test specimens with dimension of at least 350 mm × 200 mm or 300 mm × 230 mm for containers a) and b) respectively (see Clause 5) shall be cut from the test sample. The test specimens shall be cut evenly spread across the whole width of the sheet. The prepared test specimens shall be conditioned for 24 h at (23 ± 2) °C before testing.



Key

- 1 Container
- 2 Flange
- 3 Test specimen
- 4 Counter frame
- 5 Inclined plane
- 6 Slot

L_1, L_2, W_1, W_2 See Table 1

Figure 1 — Testing device

Table 1 — Dimensions of testing container

	Dimensions of the container	
1 st possibility	$L_1 = (300 \pm 1) \text{ mm}$	$W_1 = (150 \pm 1) \text{ mm}$
	$L_2 = (400 \pm 1) \text{ mm}$	$W_2 = (250 \pm 1) \text{ mm}$
2 nd possibility	$L_1 = (250 \pm 1) \text{ mm}$	$W_1 = (180 \pm 1) \text{ mm}$
	$L_2 = (350 \pm 1) \text{ mm}$	$W_2 = (280 \pm 1) \text{ mm}$

7 Procedure

The test shall be conducted at $(23 \pm 2) ^\circ\text{C}$. The test specimen shall be positioned in the testing device between the flange and the counter frame in accordance with Figure 1. The resulting container, with interior dimensions conforming to Clause 5, shall be positioned horizontally into a basin to collect the water which penetrates through the test specimen. $(2,25 \pm 0,02) \text{ l}$ of demineralised water with $(23 \pm 2) ^\circ\text{C}$ shall be poured within 1 min down the inclined plane into the apparatus. The time of examination is $3 \text{ h} \pm 5 \text{ min}$ after filling.

Protect the test equipment from any vibrations during the whole testing period.

On completion of the test, the basin under the test container shall be removed and the volume of water which has penetrated shall be measured by a graduated cylinder or determined by weighing.

8 Evaluation of results

The volume of the penetrated water of each test specimen shall be indicated with an accuracy of 2 ml and rounded to nearest 1 ml.

The repeatability and the reproducibility are not specified by this standard.

9 Test Report

The test report shall contain at least the following information:

- all details necessary to identify the product tested, including type, source, manufacturer's code number, product description, and any other relevant observation;
- reference to this European Standard (EN 13111) and any deviation from it;
- information about the test procedure, the length and the width of the test area;
- individual test results in accordance with Clause 8;
- date of the test.