



SLOVENSKI STANDARD
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Hidroizolacijski trakovi - Ugotavljanje nateznih lastnosti - 2. del: Polimerni in elastomerni trakovi za tesnjenje streh

Flexible sheets for waterproofing - Determination of tensile properties - Part 2: Plastic and rubber sheets for roof waterproofing

Abdichtungsbahnen - Bestimmung des Zug-Dehnungsverhaltens - Teil 2: Kunststoff- und Elastomerbahnen für Dachabdichtungen

Feuilles souples d'étanchéité - Détermination des propriétés en traction - Partie 2 : Feuilles d'étanchéité de toiture plastiques et élastomères

Ta slovenski standard je istoveten z: FprEN 12311-2

ICS:

91.060.20	Strehe	Roofs
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

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English Version

Flexible sheets for waterproofing - Determination of tensile properties - Part 2: Plastic and rubber sheets for roof waterproofing

Feuilles souples d'étanchéité - Détermination des propriétés en traction - Partie 2 : Feuilles d'étanchéité de toiture plastiques et élastomères

Abdichtungsbahnen - Bestimmung des Zug-Dehnungsverhaltens - Teil 2: Kunststoff- und Elastomerbahnen für Dachabdichtungen

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Foreword

This document (FprEN 12311-2:2012) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 12311-2:2010, which has been technically and editorially revised in order to:

- adjust the separation speed to CEN TC 189 standards;
- add precision data of a Round Robin test.

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 Standards on product characteristics for plastic and rubber sheets for waterproofing.

1 Scope

This European Standard specifies test methods for the determination of the tensile properties of plastic and rubber sheets for roof waterproofing.

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 1548, *Flexible sheets for waterproofing — Plastic and rubber sheets for roof waterproofing — Method for exposure to bitumen*

EN 1847, *Flexible sheets for waterproofing — Plastics and rubber sheets for roof waterproofing — Methods for exposure to liquid chemicals, including water*

EN 1849-2, *Flexible sheets for waterproofing — Determination of thickness and mass per unit area — Part 2: Plastic and rubber sheets*

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

EN ISO 7500-1, *Metallic materials — Verification of static uniaxial testing machines — Part 1: Tension/compression testing machines — Verification and calibration of the force-measuring system (ISO 7500-1:2004)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

top surface

upper side of the sheet, as used in situ

Note 1 to entry This is usually the inside of the roll.

3.2

maximum tensile force

largest value of tensile force recorded during testing

3.3

elongation at maximum tensile force

elongation of the test specimen at the maximum tensile force

3.4

elongation at break

elongation of the test specimen at rupture

4 Principle

A test specimen is stretched at a constant speed until it ruptures. The force and elongation is continuously recorded throughout the test, and preferably with a permanent record of the maximum tensile force.

FprEN 12311-2:2012 (E)**5 Apparatus**

Tensile testing machine equipped with a continuous recording of force and corresponding elongation 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 $(100 \pm 10, 200 \pm 20$ and $500 \pm 50)$ mm/min. The width of grips shall not be less than the width of the test specimen.

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 tensile 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 method of gripping shall not induce premature rupture close to the grips.

If the slippage from the grips exceeds the stated limits or for the method B (dumb-bell type) the actual elongation of the test specimen shall be measured with an extensometer.

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

6 Sampling

Samples shall be taken in accordance with EN 13416.

7 Preparation of test specimens

Unless otherwise specified, for a complete tensile test two sets of test specimens shall be prepared: a set of five for the longitudinal direction and a set of five for the transverse direction.

Test specimens shall be cut from a test piece not closer than (100 ± 10) mm from the edge of the sheet, with the aid of a template, or die cutter as follows:

- method A: rectangular type $(50 \pm 0,5)$ mm x 200 mm according to Figure 1 and Table 1;
- method B: dumb-bell type $(6 \pm 0,4)$ mm x 115 mm according to Figure 2 and Table 1 or rectangular type $(15 \pm 0,5)$ mm x 170 mm according to Figure 1 and Table 1.

Any non permanent surface layer should be removed.

A set of test specimens (longitudinal or transverse direction) with a mesh or fabric internal layer, backing or laminated reinforcement shall have the same number of threads. Cutting of threads should be avoided.

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.

The tensile properties shall be determined in accordance with method A with the following exceptions:

- for sheet with a non-woven inner layer (e.g. fibre glass mat) of less than or equal to 80g/m² method B the dumb-bell type (see Figure 2 and Table 1) shall be used.
- for determining tensile properties (young modulus /secant modulus) e.g. for EN 1548 and for determining tensile properties in accordance with EN 1847 method B with a 15 mm rectangular specimen shall be used.