



SLOVENSKI STANDARD

SIST EN 12691:2018

01-maj-2018

Nadomešča:
SIST EN 12691:2006

Hidroizolacijski trakovi - Bitumenski, polimerni in elastomerni trakovi za tesnjenje streh - Določanje odpornosti proti udarcu

Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to impact

Abdichtungsbahnen - Bitumen-, Kunststoff- und Elastomerbahnen für Dachabdichtungen - Bestimmung des Widerstandes gegen stoßartige Belastung

Feuilles souples d'étanchéité - Feuilles d'étanchéité de toitures bitumineuses, plastiques et élastomères - Détermination de la résistance au choc

Ta slovenski standard je istoveten z: **EN 12691:2018**

ICS:

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

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EUROPEAN STANDARD

EN 12691

NORME EUROPÉENNE

EUROPÄISCHE NORM

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ICS 91.100.50

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English Version

Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Determination of resistance to impact

Feuilles souples d'étanchéité - Feuilles d'étanchéité de toitures bitumineuses, plastiques et élastomères - Détermination de la résistance au choc

Abdichtungsbahnen - Bitumen-, Kunststoff- und Elastomerbahnen für Dachabdichtungen - Bestimmung des Widerstandes gegen stoßartige Belastung

This European Standard was approved by CEN on 5 December 2017.

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.

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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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12691:2018) 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 August 2018 and conflicting national standards shall be withdrawn at the latest by August 2018.

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 12691:2006.

In this revision, Subclause 5.6.2, Aluminium plate (method A) and Subclause 5.6.3, *Standard expanded polystyrene panel (method B)* are adjusted to the current EN standards and a control value method A 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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EN 12691:2018 (E)**Introduction**

This European Standard is intended for characterization and classification 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 is intended to be used in conjunction with European Standards “Definitions and characteristics” for bitumen sheets and for plastic and rubber sheets for roof waterproofing.

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1 Scope

This European Standard specifies a test for puncture by impact on sheets for roof waterproofing. Mechanical stress on waterproofing sheets ranges from static long-term loads to dynamic short-term loads. This method represents the dynamic category of load where puncture may be caused by impact.

This European Standard may also be applied for other purposes of 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 573-3, *Aluminium and aluminium alloys - Chemical composition and form of wrought products - Part 3: Chemical composition and form of products*

EN 826, *Thermal insulating products for building applications - Determination of compression behaviour*

EN 13163, *Thermal insulation products for buildings - Factory made expanded polystyrene (EPS) products - Specification*

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 following terms and definitions apply.

3.1

top surface

upper side of the sheet as used in-situ

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Note 1 to entry: It is usually the inside of the roll.

4 Principle

The test specimen is struck on the top surface of the sheet by a free falling drop mass with a puncturing tool.

The test specimen is lying on a hard support (method A) and if required additionally on a soft support (method B). After the impact, the test specimen is tested for leakage.

5 Apparatus

5.1 General

The testing is performed using a test apparatus, which enables vertically falling of the drop mass and consists of the parts indicated in 5.2 to 5.8 and can be used with a hard support (method A) or a soft support (method B).

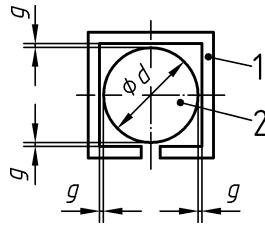
5.2 Stand

The stand can be constructed for free falling of the drop mass or optionally for rail guided falling and should be at least as long (high) as the maximum drop height to be tested (for most practical purposes 2 m will be sufficient).

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An example for a guide rail for the falling drop mass is given in Figure 1.

Dimensions in millimetres



Key

- 1 guide rail (slitted square tube e.g.)
- 2 drop mass
- d diameter between 25 mm to 30 mm
- g gap between 0,5 mm to 1 mm

Figure 1 — Guide rail and drop mass / cross section (example)

5.3 Drop mass and puncturing tool

Cylindrical steel drop mass with a fixed puncturing tool. The weight of the drop mass including the puncturing tool shall be (500 ± 5) g; the diameter should be preferable between 25 mm to 30 mm.

The puncturing tool shall be made according to the following specifications:

- formed in steel material and firmly fixed to the drop mass;
- hardened to 50 HRC; [SIST EN 12691:2018](https://standards.iteh.ai/catalog/standards/sist/3482f32b-de3a-4696-8c81-1025a86dfb63/sist-en-12691-2018)
- spherical formed with a diameter of $(12,7 \pm 0,1)$ mm;
- shaft diameter of $(10 \pm 0,1)$ mm; shaft length about 40 mm.

See example in Figure 2.

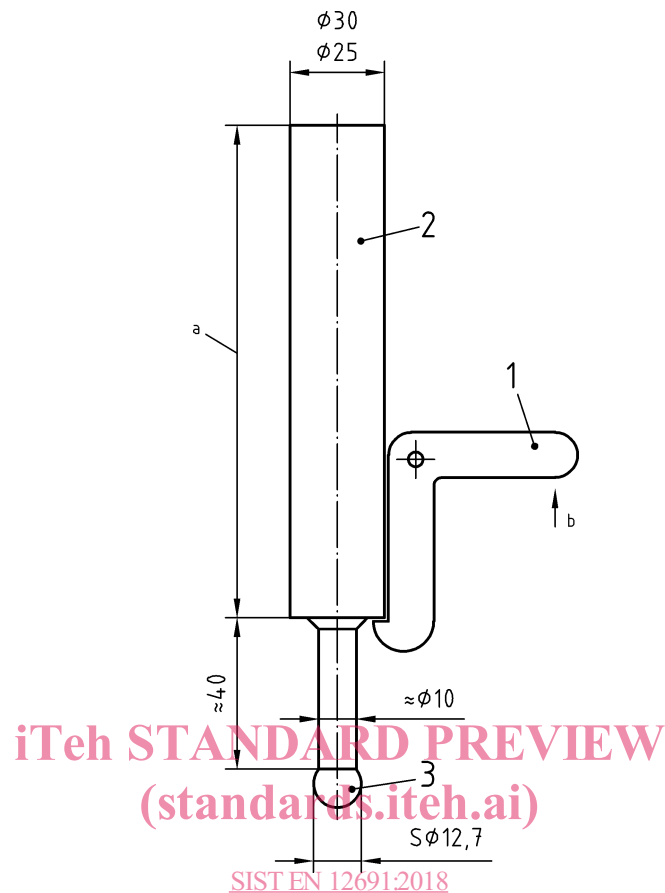
5.4 Release mechanism

Release mechanism (trigger) with a setting device for variable drop height from 200 mm to at least 2 000 mm in increments of:

- 50 mm between 200 mm and 500 mm;
- 100 mm between 500 mm and 1 000 mm;
- 250 mm for drop heights above 1 000 mm.

The drop height is measured from the bottom of the puncturing tool to the surface of the test specimen.

Dimensions in millimetres

**Key**

- 1 release mechanism
- 2 drop mass
- 3 puncturing tool
- a length according to total weight of (500 ± 5) g
- b action: push to release

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Figure 2 — Drop mass with puncturing tool and release (for guide rail) (example)

5.5 Ballast ring

Ballast ring in steel with mass of at least 2 000 g with inner diameter of approximately 100 mm (see Figure 3).

5.6 Support

5.6.1 Methods A and B

- a) For all products: substrate *Al* (see 5.6.2);
- b) For different products (only if substrate *EPS* (see 5.6.3). Type of substrate has to be indicated with the test results. required):