



SLOVENSKI STANDARD

SIST EN 12730:2001

01-december-2001

Hidroizolacijski trakovi - Bitumenski, polimerni in elastomerni trakovi za tesnjenje streh - Določevanje odpornosti proti statičnim obremenitvam

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

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

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

<https://standards.iteh.ai/catalog/standards/sist/b3a9f3d8-3158-44d9-8e3a-2eaa89123aa/sist-en-12730-2001>

Ta slovenski standard je istoveten z: EN 12730:2001

ICS:

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

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en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12730

January 2001

ICS 91.100.50

English version

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

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

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

This European Standard was approved by CEN on 10 June 2000.

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 Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

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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 July 2001, and conflicting national standards shall be withdrawn at the latest by July 2002.

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 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 product standards for bitumen, plastic and rubber sheets for roof waterproofing.

1 Scope

This European Standard specifies a test for puncture by static loading for roofing membranes. Mechanical stress on membranes varies from static long-term loads to dynamic short-term loads. This method represents the static category of load where the stress is applied over a period of time.

This European Standard may also be applied for waterproofing.

[SIST EN 12730:2001](https://standards.iteh.ai/catalog/standards/sist/b3a93d8-3158-44d9-8e3a-2eaa89123aa/sist-en-12730-2001)

2 Normative references

<https://standards.iteh.ai/catalog/standards/sist/b3a93d8-3158-44d9-8e3a-2eaa89123aa/sist-en-12730-2001>

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 applies.

prEN 13416:1998

Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling

3 Definitions

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

3.1 surface: The upper side of the sheet, as used in situ. It is usually the inside of the roll.

4 Principle

The principle of the test is to apply a concentrated load over a period of time, through a puncturing tool onto the surface of the membrane, when lying on a specified soft support (method A) or hard support (method B).

5 Apparatus

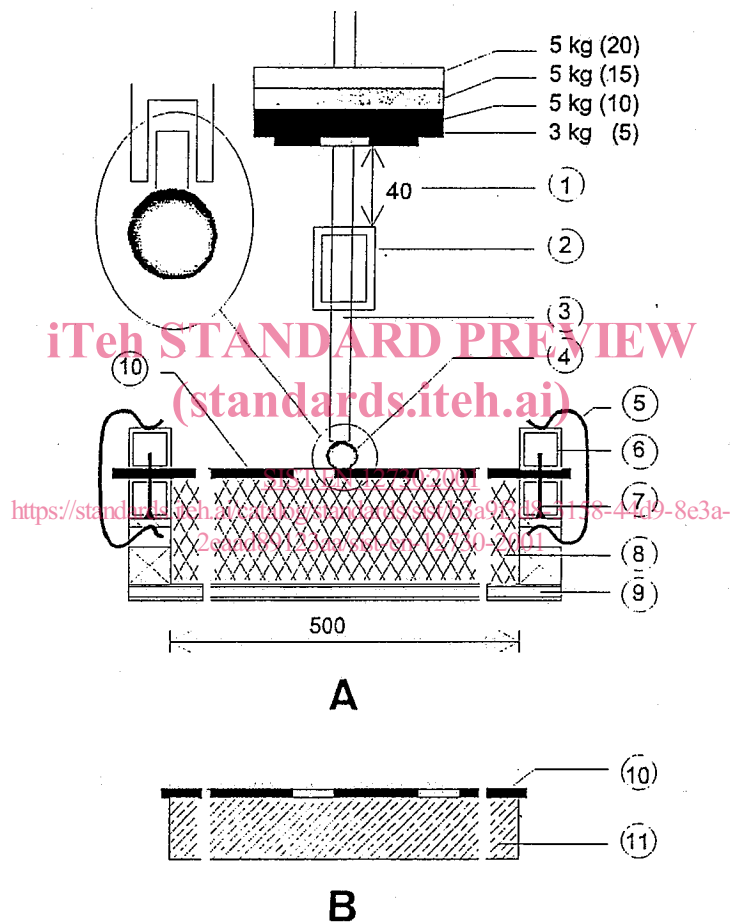
5.1 General

The testing apparatus consists of parts indicated in 5.2 to 5.6 (Figure 1)

5.2 Guide rail

The guide rail holds the loading rod in a vertical position. The vertical movement of the puncturing tool from the surface of the test specimen can be limited to (40 ± 2) mm by the guide rail.

Dimensions in millimetres

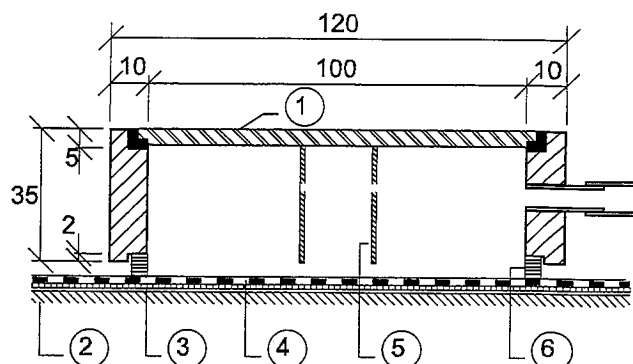


Key

1	Maximum downward movement	8	EPS (500 x 500 x 50)
2	Guide rail	9	Rigid support
3	Loading rod	10	Test specimen
4	Ball puncturing tool, diameter 10	11	Concrete (300 x 300 x 40)
5	Clamp	A	Soft support
6	Frame profile (20 x 20)	B	Hard support
7	Nail (2.8) c/c 50		

Figure 1 - Static test arrangements (example)

Dimensions in millimetres

**Key**

1	Glass plate	4	Test specimen
2	Support	5	Transparent plastic tube
3	Air permeable layer	6	Gasket

Figure 2 - Vacuum device (example)

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5.3 Loading rod

The loading rod has the puncturing tool at the lower end and a support for the loading discs in the middle. The loading rod and puncturing tool are calibrated with the support disc to have a mass of 2 kg.

5.4 Loading discs

A complete set of loading discs contains one disc with a mass of 3 kg and three discs with a mass of 5 kg.

5.5 Puncturing tool

The puncturing tool is in the shape of a 10 mm diameter ball with a 5 mm diameter thread for attachment to the loading rod. The puncturing tool is made to the following specification:

- formed in steel material
- hardened to 50 HRC
- ball diameter ($10 \pm 0,05$) mm
- surface, unmarked and polished

5.6 Supports**5.6.1 General**

Two types of supports in accordance with 5.6.2 or 5.6.3 can be used.

5.6.2 Method A using a soft support

The test specimen is fixed in a nail studded frame and laid directly in contact with the support (Figure 1). The inside dimensions of the frame are approximately 500 mm x 500 mm. The support is expanded polystyrene of density (20 ± 2) kg/m³ with a thickness of (50 ± 1) mm.

5.6.3 Method B using a hard support

The test specimen is loose laid directly onto a concrete paving slab 300 mm x 300 mm x 40 mm. The surface of the concrete shall be even and without defects.

5.7 Vacuum or pressure device

A vacuum or pressure device shall be used for the verification of possible perforation (Figure 2)

6 Sampling

Test samples shall be taken in accordance with prEN 13416:1998.

7 Preparation of test specimens

The test specimens with dimensions (550 mm x 550 mm) \pm 2 mm for method A and (300 mm x 300) mm \pm 2 mm for method B are taken from the whole width of the roll excluding 100 mm from the edges. The number of test specimens shall be 3 per loading stage for each method (A or B).

The test specimens are conditioned at least 24 h at the specified test conditions.

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8 Procedure

8.1 General

Testing is carried out at a temperature of (23 \pm 2) °C

For every test at each loading interval a new test specimen shall be used, and a new polystyrene panel for the soft support test (see also 8.2).

The test specimen is laid on the horizontal support with the surface upwards.

The puncturing tool is positioned at the centre of the test specimen.

The testing is carried out with three parallel test specimens in intervals of loading starting with 5 kg. The load is then increased by steps of 5 kg until perforation occurs, or up to a maximum load of 20 kg. The duration of loading shall be 24 h for each loading interval.

The load is applied carefully, without shock.

After each loading interval the test specimens are examined for a possible puncture by coating the surface where the load has been applied with a soap solution between (7 \pm 2) min after the test. A pressure difference of 15 kPa (0,15 bar) is applied to the area where the load has been applied by means of a vacuum or pressure device (Figure 2) with the lower pressure at the surface of the sheet. If after 60 s no air bubbles are visible, the test specimen is considered not punctured.

The material under testing is considered to resist the given load when three out of three test specimens are not punctured.