



SLOVENSKI STANDARD
SIST EN 12316-2:2001

01-december-2001

**Hidroizolacijski trakovi - Določevanje odpornosti proti razslojevanju spojev - 2.
del: Polimerni in elastomerni trakovi za tesnjenje streh**

Flexible sheets for waterproofing - Determination of peel resistance of joints - Part 2:
Plastic and rubber sheets for roof waterproofing

Abdichtungsbahnen - Bestimmung des Schälwiderstandes der Fügenähte - Teil 2:
Kunststoff- und Elastomerbahnen für Dachabdichtungen

Feuilles souples d'étanchéité - Détermination de la résistance au pelage des joints -
Partie 2: Feuilles d'étanchéité de toiture plastiques et élastomeres

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Ta slovenski standard je istoveten z: EN 12316-2:2000

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 12316-2

September 2000

ICS 91.100.50

English version

**Flexible sheets for waterproofing - Determination of peel
resistance of joints - Part 2: Plastic and rubber sheets for roof
waterproofing**

Feuilles souples d'étanchéité - Détermination de la
résistance au pelage des joints - Partie 2: Feuilles
d'étanchéité de toiture plastiques et élastomères

Abdichtungsbahnen - Bestimmung des Schälwiderstandes
der Fügenähte - Teil 2: Kunststoff- und Elastomerbahnen
für Dachabdichtungen

This European Standard was approved by CEN on 17 August 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 Central Secretariat 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 Central Secretariat 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.

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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

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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 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

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This European Standard specifies a method for determining the resistance to peeling of joints between two adjacent sheets of the same plastic or rubber sheets for roof waterproofing.

This test method will be used mainly for testing the joints in mechanically fastened plastic or rubber sheets for roof waterproofing.

NOTE The peeling characteristics of a joint between two widths of plastic or rubber sheets vary considerably depending on the material, method of jointing, the size of the overlap and the workmanship.

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 Definitions

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

3.1 Peel resistance: The tensile force required to completely separate a prepared joint test specimen by peeling.

4 Principle

The principle of the test is to pull a test specimen to peel a joint at a constant speed until it breaks. The tensile force is continuously recorded throughout the test.

5 Apparatus

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

Tensile testing machine shall have a sufficient loading capacity and a grip separation speed of (100 ± 10) mm/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 2 mm.

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

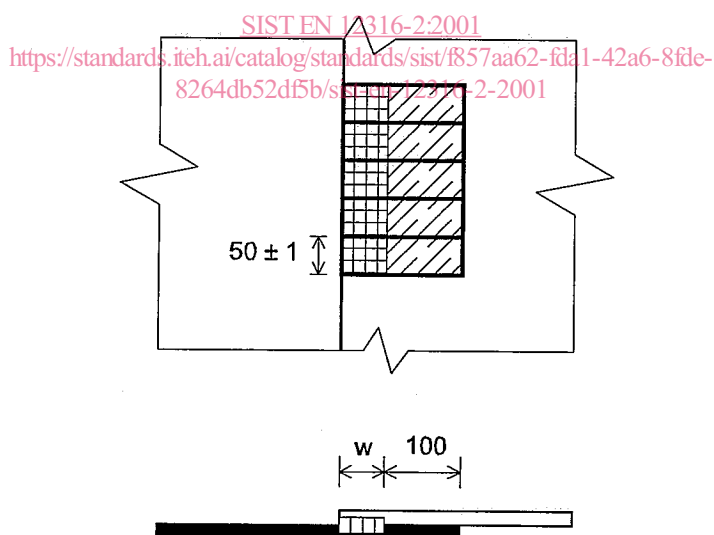
The force measuring system shall meet at least Class 2 of EN ISO 7500-1 (i.e. $\pm 2\%$).

6 Sampling

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

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Dimensions in millimetres

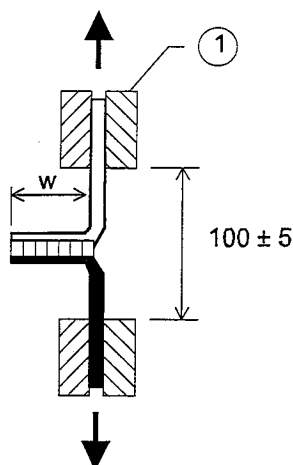


Key

w Width of joint

Figure 1 - Preparation of specimen from specially made side and end laps

Dimensions in millimetres

**Key**

- 1 Grip
w Width of joint

Figure 2 - Peel strength testing of side and end laps
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7 Preparation of test pieces and test specimens

Test pieces to be used for jointing should be previously conditioned for at least 20 h at $(23 \pm 2)^\circ\text{C}$ and at a relative humidity between 30% and 70%.

Test pieces of the sheet are joined by the method(s) to be used for installation. After jointing, the test piece shall be conditioned for a minimum of 2 h at $(23 \pm 2)^\circ\text{C}$ and at $(50 \pm 5) \% \text{RH}$ before testing unless the manufacturer recommends differently.

From each of these joint test pieces, five rectangular test specimens $(50 \pm 1) \text{ mm}$ wide shall be cut, perpendicular to the joint. They shall have such a length, that the ends of the specimen fill the grips and that the complete overlap can be tested perpendicular to joint (see Figure 1 and Figure 2).

Rectangular joint test specimens shall be prepared representing all possibilities of jointing according to the way(s) to be used for installation.

The number of specimens tested is five per set.

8 Procedure

The test specimen shall be firmly held in the grips of the tensile testing machine, taking care that the longitudinal axis of the test specimen, the axis of the tensile testing machine and the grips are correctly aligned.

The clear distance between the grips shall be $(100 \pm 5) \text{ mm}$ (see Figure 2). No preload will be applied.

The test is carried out on a test specimen at a temperature of $(23 \pm 2)^\circ\text{C}$ and at a constant separating speed for the grips of $(100 \pm 10) \text{ mm/min}$.

The applied force and extension shall be recorded continuously until the test specimen separates.

The mode of failure of the joint shall be recorded.

9 Expression of results

9.1 Jointing information

State all relevant information on the formation and the conditioning of the joint.

9.2 Evaluation

A force extension graph shall be drawn up.

Disregard any test result where the test specimen breaks less than 10 mm from the grips or slips by more than the permitted limit within the grips of the tensile testing machine, and retest with a replacement specimen.

The mode of failure shall be reported.

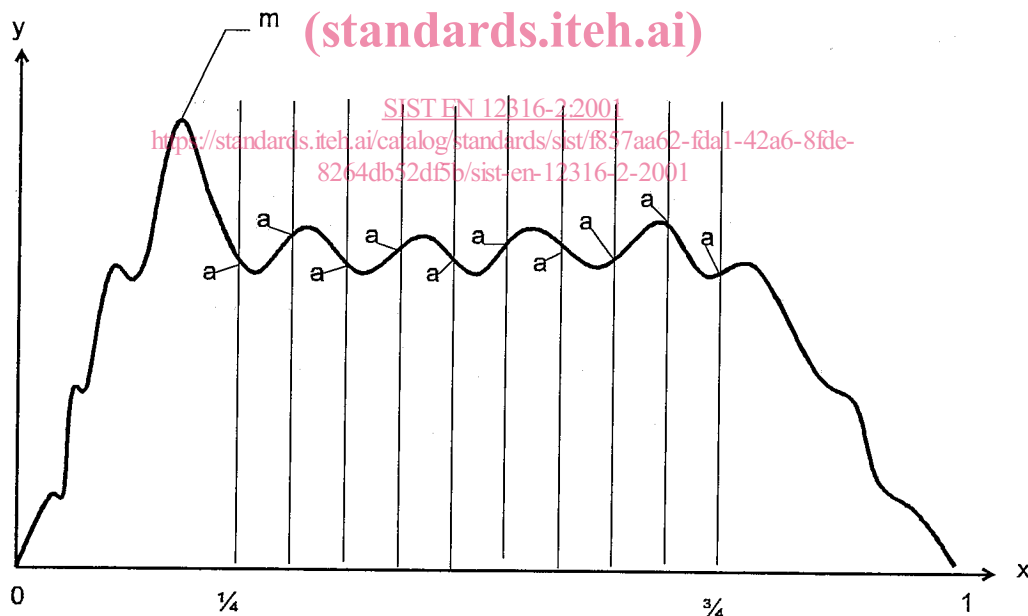
9.2.1 Maximum peel resistance

From the graph read the maximum force and record as the maximum peel resistance of the test specimen in N/50 mm (relevant if the test specimen ruptures and no peel occurs and there is only one peak).

9.2.2 Average peel resistance (Relevant only if peel occurs)

The first and last quarter of the graph shall not be included when calculating the average peel resistance of the test specimen. An average value is calculated on the remaining section by considering 10 equidistant values and expressed as N/50 mm (see Figure 3).

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Key

- m Maximum peel force
- a Points to be evaluated
- y Force axis
- x Extension axis

Figure 3 - Graph for calculating the peel resistance (example)

NOTE The purpose of the evaluation method specified here is to calculate an average peel resistance value which corresponds to the mean value of the forces acting on the test specimen at certain specified times during testing. This method also permits an evaluation to be carried out if the graphs do not feature