

**Flexible sheets for roofing - Bitumen
sheets for roof waterproofing -
Determination of flow resistance at
elevated temperature**

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waterproofing - Determination of flow resistance at
elevated temperature

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 1110:2000 sisaldab Euroopa standardi EN 1110:1999 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 11.01.2000 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 1110:2000 consists of the English text of the European standard EN 1110:1999.</p> <p>This document is endorsed on 11.01.2000 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This standard is intended for the characterisation and/or classification of bitumen sheets as manufactured or supplied before use. The 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.</p>	<p>Scope:</p> <p>This standard is intended for the characterisation and/or classification of bitumen sheets as manufactured or supplied before use. The 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.</p>
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Võtmesõnad:

ICS 91.100.50

English version

Flexible sheets for waterproofing

Bitumen sheets for roof waterproofing

Determination of flow resistance at elevated temperature

Feuilles souples d'étanchéité – Feuilles
d'étanchéité de toiture bitumineuses –
Détermination de la résistance au
fluage à température élevée

Abdichtungsbahnen – Bitumenbahnen
für Dachabdichtungen – Bestimmung
der Wärmestandfestigkeit

This European Standard was approved by CEN on 1999-07-11.

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CEN

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 February 2000, and conflicting national standards shall be withdrawn at the latest by September 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 the characterisation and/or classification of bitumen sheets as manufactured or supplied before use. The 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 specification for reinforced bitumen sheets for roofing.

This test is used to determine the flow resistance of the coating or to determine the flow resistance limit of a bitumen sheet. The test result depends on the type of coating, the sheet thickness, type and position of the reinforcement and type and mass of the mineral granules on the surface. The use of test results directly to compare the performance of the coating in sheets of different composition is strictly limited because of the influence of other parameters which have not been quantified. Results from sheets with the same composition can be used to compare the performance of the coating directly.

The test primarily serves to characterize bitumen sheets. It can also be used to evaluate the change in flow resistance limit as a result of artificial ageing. It is not save to relate the test results directly to the actual performance to be expected at elevated temperatures in service.

1 Scope

This European Standard specifies the determination of flow resistance of bitumen sheets at elevated temperature. The test is carried out on both the upper face and lower face of the sheet either at a specified temperature or consecutively at different temperatures in order to determine the flow resistance limit.

Therefore, the test can be used to provide proof of the flow resistance required for a product or to determine the flow resistance limit specific to the product e.g. in order to establish the change in this behaviour as a result of artificial ageing.

The test is not applicable to bitumen sheets without reinforcement.

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 edition of the publication referred to applies.

ISO 5725 : 1986 Precision of test methods - Determination of repeatability and reproducibility for a standard test method by inter-laboratory tests.

3 Definitions

For the purposes of this standard the definitions indicated in 3.1 to 3.3 and in the corresponding European Standards on product specifications apply.

3.1 flow resistance: The ability of bitumen sheet test specimens to be suspended vertically under specified temperature conditions without its coating moving by more than 2 mm compared to the reinforcement.

3.2 flow resistance limit (F): The temperature at which the coating of a vertically suspended bitumen sheet test specimen moves under specified conditions by 2 mm compared to the reinforcement (see figure 2).

3.3 flow: The maximum distance between the bottom edges of mark 1 and mark 2 on the faces of the test specimens due to the displacement of the coating (see figure 1).

4 Principle

Test specimens taken from the test sample are suspended vertically in an oven at a specified temperature. The displacement of the coating relevant to the reinforcement is measured on both faces of the test specimen after a specific time. Failure is defined as a mean displacement greater than 2,0 mm. The flow resistance limit is determined by interpolation of the results at two test temperatures.

5 Apparatus

5.1 Oven with circulating air (without fresh air supply) and a maximum temperature deviation of $\pm 2^\circ\text{C}$ in the test area. After the door has been opened for 30 s, the recovery period to attain the working temperature again shall not exceed 5 min.

5.2 Thermosensor, connected to an external electronic thermometer capable of measuring to $\pm 1^\circ\text{C}$ in the temperature range.

5.3 Suspension devices (e.g. clamps) at least 100 mm wide with which the test specimens are held over their full width in line and be suspended in the test area (see figure 1).

5.4 Optical measuring instrument, (e.g. graduated magnifying glass) with a scale division of at least 0,1 mm.

5.5 Device for inserting round metal lugs, inside diameter approximately 4 mm.

5.6 Device for drawing a straight marking line (e.g. as shown in figure 1).

5.7 Ink marker, with line width not exceeding 0,5 mm and white, water-resistant ink.

5.8 Siliconized paper.

6 Sampling

Test samples shall be taken in accordance with the corresponding European Standard.

Rectangular test specimens with dimensions (115 ± 1) mm x (100 ± 1) mm, as required by the tests described in 8.2 or 8.3, are taken from the test sample uniformly over the width of the sheet and with the larger dimension in the longitudinal direction of the sheet. The test specimens shall not be taken within 150 mm of the edges of the sheet. The test specimens shall be numbered consecutively, beginning from one edge of the sheet, and the upper and lower faces of the sheet shall be marked.