Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 1109:2013 sisaldab Euroopa standardi EN 1109:2013 ingliskeelset teksti.	This Estonian standard EVS-EN 1109:2013 consists of the English text of the European standard EN 1109:2013.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 24.04.2013.	Date of Availability of the European standard is 24.04.2013.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 91.100.50

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1109

April 2013

ICS 91.100.50

Supersedes EN 1109:1999

English Version

Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature

Feuilles souples d'étanchéité - Feuilles d'étanchéité de toiture bitumineuses - Détermination de la souplesse à basse température

Abdichtungsbahnen - Bitumenbahnen für Dachabdichtungen - Bestimmung des Kaltbiegeverhaltens

This European Standard was approved by CEN on 14 March 2013.

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.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 1109:2013: E

Contents

Page

Foreword

This document (EN 1109:2013) 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 October 2013, and conflicting national standards shall be withdrawn at the latest by October 2013.

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 1109:1999.

The significant change made since this previous version is:

— the change of the coolant to be used.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey 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 systems of such products and installed in the works.

This test is intended to be used in conjunctions within the relevant European products specifications for bitumen flexible sheets for waterproofing.

The test for flexibility at a low temperature is intended to determine the susceptibility to cracking of the bituminous coating on a sheet when bent under specified conditions. The test result is dependent on the type of coating, on the thickness of the sheet, type and position of the reinforcement and the behaviour of the surface material. The use of the test results directly to compare the performance of coatings in sheets of different composition is strictly limited because of the influence of parameters which have not been quantified. Only the results from sheets with the same composition can be used to compare the performance directly.

The test primarily serves to characterise bitumen sheets. It can be used to evaluate the change in the cold bending behaviour during artificial ageing. It is not safe to relate the test results to the actual performance to be expected at low temperatures in service.

Compared to EN 1109:1999, in this new version of EN 1109 one type of coolant is described, which will give more reliable results.

1 Scope

This European Standard specifies the determination of flexibility of bitumen sheets at low temperatures. The test can be carried out on the upper or lower face of the sheet either at a predetermined temperature or successively at different temperature steps to determine the cold bending temperature which represents a limiting temperature. Therefore, the test can be used to confirm a minimum cold bending temperature for a product or to determine the specific cold bending temperature for the product e.g. to determine the change of these properties as a result of artificial ageing.

In the case of sheets with the same bituminous compound on both sides and where the reinforcement is placed in the cross section visually closer to the upper surface, the test is performed on the bottom face only.

If the upper surface is covered with a non-woven (e.g. tissue, fleece etc.) or metal facing, the test is performed on the bottom side only.

If the sheet on the upper surface is covered with permanent light surface protection and where the reinforcement is placed in the cross section visually closer to the upper surface, the test is performed on the bottom side only.

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 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
flexibility
ability of bitumen sheet test specimens to be bent under specified conditions without cracking

3.2
cold bending temperature
lowest temperature at which bitumen sheet test specimens can be bent around specified mandrel without cracking

3.3
crack
fissure in the coating of the bitumen sheet extending to the reinforcement or completely through unreinforced sheets

4 Principle

The test specimens taken from the test sample are bent through an angle of 180° in a mechanical bending apparatus immersed in a coolant.

After bending, the test specimens are examined for the presence of cracks in the coating.