SLOVENSKI STANDARD
SIST EN 14224:2010

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Nadomešča:
SIST EN 14224:2006

Hidroizolacijski trakovi - Hidroizolacija betonskih premostitvenih objektov in drugih betonskih povoznih površin - Določanje sposobnosti premoščanja razpok

Flexible sheets for waterproofing - Waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles - Determination of crack bridging ability

Abdichtungsbahnen - Abdichtungen für Betonbrücken und andere Verkehrsflächen auf Beton - Bestimmung der Fähigkeit zur Rissüberbrückung

Feuilles souples d'étanchéité - Systèmes d'étanchéité pour ponts et autres surfaces en béton circulables par les véhicules - Détermination de l'aptitude à ponter les fissures

Ta slovenski standard je istoveten z: **EN 14224:2010**

ICS:

91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

SIST EN 14224:2010 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14224

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ICS 91.100.50

Supersedes EN 14224:2005

English Version

Flexible sheets for waterproofing - Waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles - Determination of crack bridging ability

Feuilles souples d'étanchéité - Systèmes d'étanchéité pour ponts et autres surfaces en béton circulables par les véhicules - Détermination de l'aptitude à ponter les fissures

Abdichtungsbahnen - Abdichtungssysteme für Betonbrücken und andere Verkehrsflächen aus Beton - Bestimmung der Rissüberbrückungsfähigkeit

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

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Contents

Page

Foreword

This document (EN 14224:2010) 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of an identical text or by endorsement, at the latest by November 2010, and conflicting national standards shall be withdrawn at the latest by November 2010.

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1 Scope

This European Standard describes a test method for determining the crack bridging ability of reinforced bitumen sheets used in waterproofing systems on concrete bridge decks and other areas of concrete trafficable by vehicles.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 13375:2004, *Flexible sheets for waterproofing — Waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles — Specimen preparation*

EN 13416:2001, *Flexible sheets for waterproofing — Bitumen, plastic and rubber sheets for roof waterproofing — Rules for sampling*

EN 14695:2010, *Flexible sheets for waterproofing — Reinforced bitumen sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete — Definitions and characteristics*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13416:2001, EN 13375:2004, EN 14695:2010 and the following apply.

3.1
crack bridging ability
ability of reinforced bitumen sheets to withstand movements of the crack of the base specimen without deterioration

3.2
crack width
distance between the sides of the crack of the base specimen, measured by monitoring the movement of the base specimen during the test

3.3
nominal curve
input of changes as a function of time which the crack width of the base specimen shall follow during a test

3.4
completely broken
disconnection of the reinforced bitumen sheets above the crack of the base specimen into two completely separated parts

4 Test method

4.1 Principle

After applying the reinforced bitumen sheet(s), a crack is induced in the base specimen at the saw-cut.

The crack bridging ability of reinforced bitumen sheets is determined by periodically varying the crack width within defined limits. The test can be carried out at different temperatures.

4.2 Apparatus

4.2.1 Temperature controlled chamber, with an accuracy of ± 1 °C, for the test specimens and the loading parts of the testing apparatus during the test.

4.2.2 Testing apparatus, for generating changes in the crack width, able to control and monitor the crack width of the base specimen during the test.

Devices to fix the test specimens onto the testing apparatus shall not influence the sheet(s).

4.2.3 Crack width measuring device, with an accuracy of ± 0,01 mm, to control and monitor the crack width during the test.

4.3 Sampling and preparation of test specimens

4.3.1 Sampling

Samples and test pieces of the reinforced bitumen sheet(s) shall be taken in accordance with EN 13416.

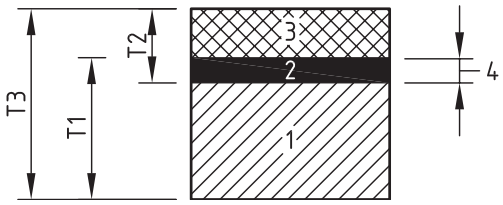
4.3.2 Preparation of test specimens

Test specimens of type 1 and 3 according to EN 13375:2004 with the dimensions of (400 ± 5) mm × (200 ± 2) mm × ≥ 40 mm shall be used (see Figure 1). Test specimen preparation is specified as well as specifications for concrete base specimen in EN 13375.

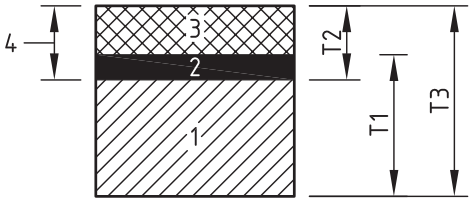
Test specimens of type 1 are used for waterproofing systems not including an asphalt layer as protection layer. Test specimens of type 3 are used for waterproofing systems including an asphalt layer as protection layer which has the additional function as a waterproofing layer.

If the reinforced bitumen sheets have anisotropic properties, the test specimens shall be prepared in such a manner that the direction with lower elongation is tested.

NOTE The anisotropic behaviour of reinforced bitumen sheets can be observed by the behaviour during the tensile test according to EN 12311-1 if the elongation is different between the two principle directions of the sheet.



a) Waterproofing system not including an asphalt layer as protection layer



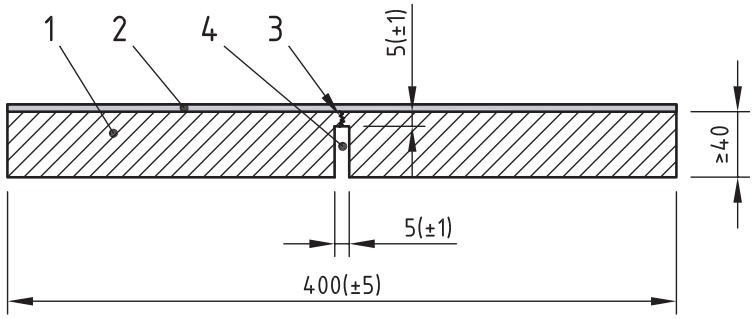
b) Waterproofing system including an asphalt layer as protection layer

Key
1 Base specimen
2 Waterproofing sheet(s)
3 Asphalt layer
4 Waterproofing system
T1 Specimen type 1
T2 Specimen type 2
T3 Specimen type 3

Figure 1 — Cross sections through specimens

For test specimens of type 1 a saw-cut shall be made without damage to the reinforced bitumen sheet(s) in the underside of the base specimens as shown in Figure 2.

Dimensions in millimetres

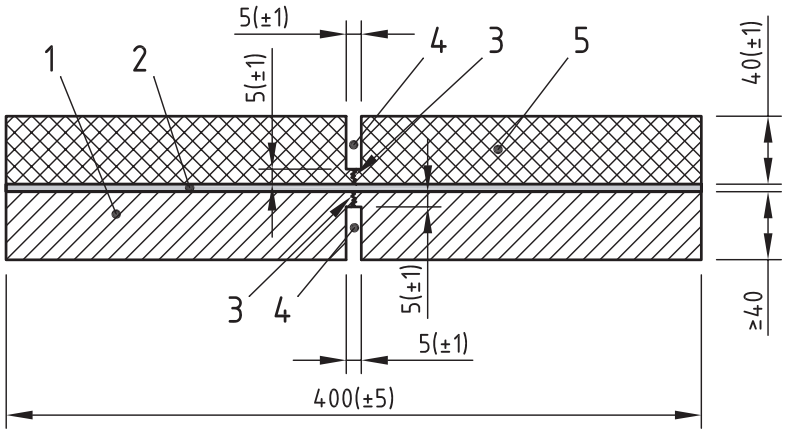


Key
1 Base specimen
2 Waterproofing layer
3 Induced crack
4 Saw-cut

Figure 2 — Test specimen of type 1 prepared for the test

For test specimens of type 3 both the base specimen and the asphalt protection layer shall be provided with a saw-cut to create the predetermined breaking point (see Figure 3).

Dimensions in millimetres



Key
1 Base specimen
2 Waterproofing layer
3 Induced crack
4 Saw-cut
5 Asphalt layer (protection layer)

Figure 3 — Test specimen of type 3 prepared for the test

4.4 Procedure

4.4.1 Number of tests

Three tests shall be carried out for each temperature which is intended to be applied.

4.4.2 Preparation for the test

The crack in the base specimen above the saw cut, or the crack between the saw cuts when the protection layer is present, is produced mechanically in the testing apparatus, see 4.2.2, at the test temperature by introducing a controlled force in such a way that no bending in the test specimen occurs. The crack width shall not exceed 0,10 mm during this procedure.

The test specimen shall be fixed in the testing apparatus in such a way that the relative movement of the test specimen and the apparatus is negligible. The method of attachment in the apparatus shall ensure that the applied force acts in the plane of the tested reinforced bitumen sheet(s). Bending shall be prevented during testing. An example for a loading device is given in Figure 4.