



SLOVENSKI STANDARD
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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: FprEN 14224

ICS:

91.100.50 Veziva. Tesnilni materiali Binders. Sealing materials

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FINAL DRAFT
FprEN 14224

October 2009

ICS 91.100.50

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

This draft European Standard is submitted to CEN members for unique acceptance procedure. It has been drawn up by the Technical Committee CEN/TC 254.

If this draft becomes a European Standard, 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.

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

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Foreword

This document (FprEN 14224:2009) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by BSI.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 14224:2005.

FprEN 14224:2009 (E)

1 Scope

This document 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*

prEN 14695:2003, *Flexible sheets for waterproofing — Reinforced bitumen sheets for waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles - 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, prEN 14695:2003 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

- a) *Temperature controlled chamber*, with an accuracy of ± 1 °C, for the test specimens and the loading parts of the testing apparatus during the test.
- b) *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).
- c) *Crack width measuring device*, with an accuracy of $\pm 0,01$ 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 with the dimensions of (400 ± 5) mm x (200 ± 2) mm x ≥ 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.

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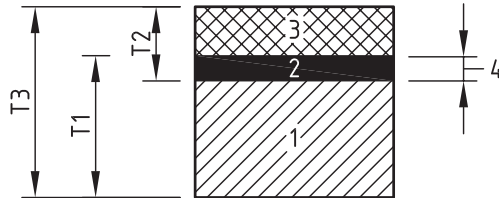


Figure 1a – Waterproofing system not including an asphalt layer as protection layer

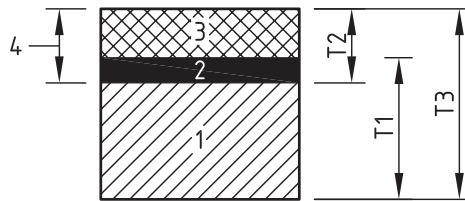


Figure 1b – Waterproofing system including an asphalt layer as protection layer

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