SLOVENSKI STANDARD
kSIST FprEN 14223:2016

01-december-2016

Hidroizolacijski trakovi - Hidroizolacija betonskih premostitvenih objektov in drugih betonskih povoznih površin - Določanje sposobnosti vpijanja vode

Flexible sheets for waterproofing - Waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles - Determination of water absorption

Abdichtungsbahnen - Abdichtung von Betonbrücken und anderen Verkehrsflächen aus Beton - Bestimmung der Wasserabsorption

Feuilles souples d'étanchéité - Étanchéité des tabliers de ponts en béton et autres surfaces en béton circulables par les véhicules - Détermination de l'absorption d'eau

Ta slovenski standard je istoveten z: **FprEN 14223**

ICS:

91.100.50 Veziva. Tesnilni materiali Binders. Sealing materials

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FINAL DRAFT
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English Version

Flexible sheets for waterproofing - Waterproofing of concrete bridge decks and other concrete surfaces trafficable by vehicles - Determination of water absorption

Feuilles souples d'étanchéité - Étanchéité des tabliers de ponts en béton et autres surfaces en béton circulables par les véhicules - Détermination de l'absorption d'eau

Abdichtungsbahnen - Abdichtung von Betonbrücken und anderen Verkehrsflächen aus Beton - Bestimmung der Wasserabsorption

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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Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

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European foreword

This document (FprEN 14223:2016) has been prepared by Technical Committee CEN/TC 254 “Flexible sheets for waterproofing”, the secretariat of which is held by NEN.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 14223:2005.

The significant technical changes are the new reference to prEN 17048:2016 at Clause 2, Normative references, and substitution of the terms “bitumen sheet” with the generic wording “waterproofing sheet” at every clause where needed.

1 Scope

This European Standard specifies a test method for the determination of water absorption in waterproofing sheets which could influence the functional behaviour of these sheets.

NOTE It is primarily the reinforcement's ability to absorb water which is examined by this test.

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 1109, *Flexible sheets for waterproofing - Bitumen sheets for roof waterproofing - Determination of flexibility at low temperature*

EN 13416, *Flexible sheets for waterproofing - Bitumen, plastic and rubber sheets for roof waterproofing - Rules for sampling*

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

prEN 17048, *Flexible sheets for waterproofing – Plastic and rubber sheets for waterproofing of concrete bridge decks and other trafficked areas of concrete - Definitions and characteristics*

ISO 5725-2, *Accuracy (trueness and precision) of measurement methods and results — Part 2: Basic method for the determination of repeatability and reproducibility of a standard measurement method*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13416, EN 14695, prEN 17048 and the following apply.

3.1
water absorption
increase in mass of test specimen after immersion in water expressed as a percentage

4 Test method

4.1 Principle

The water absorption of the waterproofing sheet is measured after the test specimen has been immersed in water for a defined period and determined as the increase in mass of the test specimen.

4.2 Apparatus and materials

4.2.1 Balance, capable of measurements to the nearest 0,1 g.

4.2.2 Water bath, capable of maintaining a temperature of (23 ± 3) °C.

4.2.3 Chamber (or laboratory), capable of maintaining a temperature of (23 ± 3) °C and (50 ± 5) % RH.

4.2.4 Distilled water, or de-ionized water.

4.2.5 Equipment for hanging test specimens, without damaging the specimens.

4.2.6 Steel wire brush, medium hard.

4.2.7 Oven with circulating air, (without fresh air supply) and capable of maintaining a temperature of (50 ± 3) °C.

4.3 Preparation of test specimens

Take samples in accordance with EN 13416. The test specimens shall be taken at random and at least 1 m from the end of the roll and 100 mm from the edge of the sheet.

Five test specimens with dimensions of (200 ± 1) mm × (200 ± 1) mm shall be prepared for testing. If the reinforced waterproofing sheet has a surfacing of fine mineral or granules, the surface shall be brushed gently with a steel wire brush to remove any loose mineral or granule. A protective film on the bottom side should be removed as described in EN 1109. Should problems with heterogeneous results occur (4.6.2) due to surfacing of fine mineral or granules, test specimens may be taken from parts free from such surfacing. The test specimen area shall be the same as described above.

4.4 Drying and conditioning of the test specimens

Dry the test specimens for 24 h ± 30 min at (50 ± 3) °C and then condition them for 1 h ± 5 min at (23 ± 3)°C and (50 ± 5) % RH before testing. During drying and conditioning the test specimens are placed hanging vertically with a space of at least 20 mm between test specimens.

4.5 Procedure

4.5.1 Weigh the test specimen (m_1) and then immerse it in water for 28 days ± 4 h at (23 ± 3)°C. The test specimen shall be placed hanging vertically in the water with a space of at least 20 mm between test specimens. The entire area of the test specimen shall be covered with water during the entire test period.

4.5.2 After the 28 days of immersion in water, air dry the test specimen for 5 h ± 5 min at (23 ± 3)°C and (50 ± 5) % RH. During air drying the test specimen shall be placed hanging vertically with a space of at least 20 mm between the test specimens. The set of five test specimens shall be placed in the laboratory with a free space of air surrounding it (at least 0,5 m on each side).

4.5.3 Reweigh the test specimen (m_2).

4.6 Expression of results

4.6.1 Calculation

The water absorption *w* for each test specimen (expressed as a percentage by mass) shall be calculated using Formula (1)

$$w = \frac{m_2 - m_1}{m_1} 100 \qquad (1)$$

where:

m_1 is the mass of the test specimen after drying and conditioning;

m_2 is the mass of the test specimen after immersion in water for 28 days and drying for 5 h.

The water absorption mean value of the five test specimens shall be calculated and recorded.

4.6.2 Precision

The repeatability *r* and the reproducibility *R* is determined by:

$$r = 0{,}0995w + 0{,}0766 \quad (2)$$

$$R = 0{,}154w + 0{,}1048 \quad (3)$$

where w is the water absorption, in % by mass.

Based on the given repeatability, the test shall be repeated if the difference between w_{max} and w_{min} is higher than $0{,}3098w_{mean} + 0{,}2385$.

NOTE 1 Precision data are based on a ring test performed in accordance with ISO 5725-2 for water absorption values between 0,2 % and 5,1 % by mass.

NOTE 2 The precision data have only been found for bitumen sheets.

4.7 Test report

The test report shall include at least the following information:

a) all details necessary to identify the product tested;

b) reference to this European Standard and any deviation from it;

c) information about sampling, preparation, drying and conditioning of test specimens in accordance with 4.3 and 4.4;

d) information about the procedure in accordance with 4.5;

e) test results in accordance with 4.6;

f) date of tests.