BS EN 14187-3:2017

BSI Standards Publication

Cold applied joint sealants — Test methods

Part 3: Determination of self-levelling properties

National foreword

This British Standard is the UK implementation of EN 14187-3:2017. It supersedes BS EN 14187-3:2003 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/510/3, Materials for concrete roads.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Cold applied joint sealants - Test methods - Part 3: Determination of self-levelling properties

Mastics pour joints appliqués à froid - Méthodes d'essai - Partie 3 : Détermination des propriétés d'autonivellement

Kalt verarbeitbare Fugenmassen - Prüfverfahren - Teil 3: Bestimmung der selbstverlaufenden Eigenschaften

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European foreword

This document (EN 14187-3:2017) has been prepared by Technical Committee CEN/TC 227 "Road materials", the secretariat of which is held by DIN.

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of an identical text or by endorsement, at the latest by September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14187-3:2003.

Apart from editorial changes no major changes have been made in this revision.

This European Standard is one of a series of standards as listed below:

EN 14187-1, *Cold applied joint sealants — Test methods — Part 1: Determination of rate of cure*.

EN 14187-2, *Cold applied joint sealants — Test methods — Part 2: Determination of tack free time*.

EN 14187-3, *Cold applied joint sealants — Test methods — Part 3: Determination of self-levelling properties*.

EN 14187-4, *Cold applied joint sealants — Test methods — Part 4: Determination of the change in mass and volume after immersion in test fuels and liquid chemicals*.

EN 14187-5, *Cold applied joint sealants — Test methods — Part 5: Determination of the resistance to hydrolysis*.

EN 14187-6, *Cold applied joint sealants — Test methods — Part 6: Determination of the adhesion/cohesion properties after immersion in test fuels and liquid chemicals*.

EN 14187-7, *Cold applied joint sealants — Test methods — Part 7: Determination of the resistance to flame*.

EN 14187-8, *Cold applied joint sealants — Test methods — Part 8: Determination of the resistance to artificial weathering by UV-irradiation*.

EN 14187-9, *Cold applied joint sealants — Test methods — Part 9: Function testing of joint sealants*.

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1 Scope

This European Standard describes a test method for determination of the self-levelling properties of cold applied normal and fuel resistant joint sealants for concrete pavements to be used in roads, airfields and other trafficked areas.

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 ISO 6927, *Buildings and civil engineering works - Sealants - Vocabulary (ISO 6927)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 6927 apply.

4 Principle

The self-levelling properties of cold applied joint sealants are determined by pouring into moulds in horizontal and inclined positions.

5 Apparatus and materials

5.1 Mixing baker from polyethylene with a content of 250 ml.

5.2 Flat bladed spatula.

5.3 Mould (Figure 1) consisting of a channel with both ends closed and internal dimensions of (20 ± 1) mm wide, (25 ± 1) mm deep and (300 ± 1) mm long. The channel shall be made of 1 mm to 2 mm thick aluminium, steel or plastic.

5.4 Wedge shaped pieces for positioning the mould in a horizontal position using a spirit level and at a (2,5 ± 0,1) % slope with the level plane.

5.5 Micrometer, capable of measurement to 100 µm, fitted with a ratchet.

Other means of measuring this difference in depth are acceptable providing they are of equal accuracy.

Dimensions in millimetres

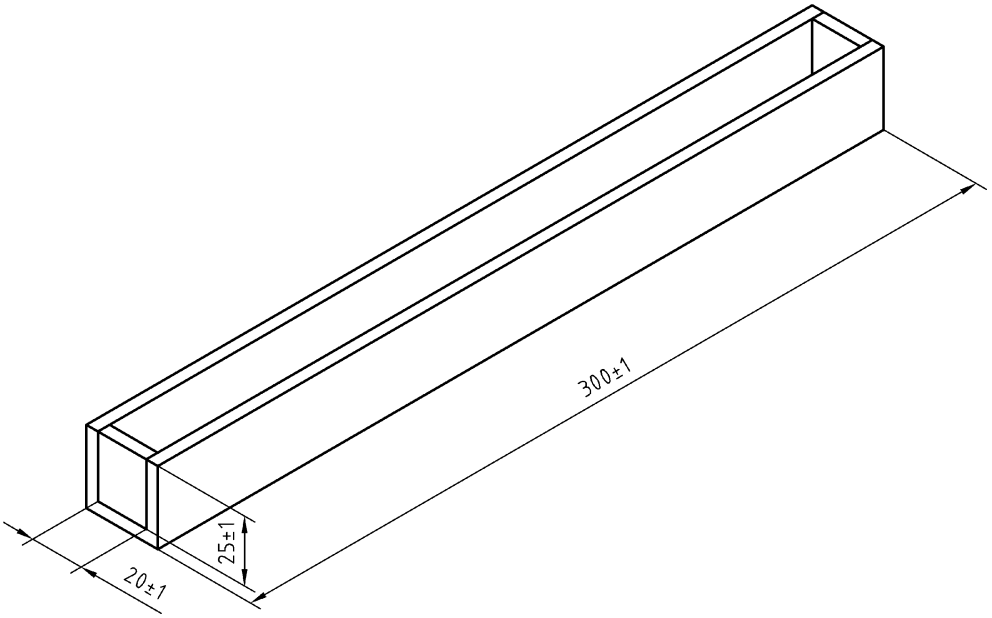

Figure 1 — Mould for the test of the self-levelling properties

6 Conditioning

Condition the mixing baker (5.1), moulds (5.3), flat bladed spatula (5.2) and supplies of sealant samples in a refrigerated environment at (5 ± 2) °C for the test in the horizontal plane and at (23 ± 2) °C for the test in inclined position for a period of 16 to 24 h.

7 Procedure

7.1 General

For multi-component cold applied joint sealants, thoroughly mix appropriate quantities of base component with curing agent in the mixing baker following the manufacturer's instruction within 2 min. One-component sealants can be applied directly from the pack.

7.2 Determination of self-levelling properties using a horizontal mould at (5 ± 2) °C

7.2.1 Pour the sealant into the mould in one continuous pour for 30 s along the axis of the mould at a height between 70 mm and 100 mm. Allow the material to flow freely to within 5 mm of the top of the mould.

7.2.2 Transfer the mould (see 5.3) immediately after filling, without vibration, to the refrigerated environment at (5 ± 2) °C and position in a horizontal plane using the spirit level (5.3) and leave to cure 48 h at (5 ± 2) °C.

7.2.3 Transfer the mould (5.3) to the micrometer (5.5). Set the probe in the channel at a convenient height above the sealant and zero the test equipment. Measure the depth of the sealant surface below the zero datum midway between the sides of the channel to an accuracy of ± 0,2 mm at the centre point of the mould and at points 25 mm, 50 mm, 75 mm, 100 mm and 125 mm on either side of the centre point.

7.2.4 Subtract the highest reading from the lowest reading and record the difference to the nearest 0,5 mm.

7.3 Determination of self-levelling properties using a mould inclined at 2,5 % slope at (23 ± 2) °C

7.3.1 Position the mould conditioned at (23 ± 2) °C horizontally using the spirit level (5.3). Apply the sealant to the mould as described in 7.2, but in this case overfill the mould and strike off the surplus material level to the mould edges using the flat bladed spatula.

7.3.2 Transfer the mould (5.3) immediately after filling and with a minimum of vibration in the environment capable of maintaining the test specimen at a temperature of (23 ± 2) °C and (50 ± 5) % relative humidity and position at the (2,5 ± 0,1) % slope. Leave to cure for 24 h at (23 ± 2) °C and (50 ± 5) % relative humidity.

7.3.3 As described in 7.2.3 measure the depth below an arbitrary datum at two points 20 mm from either end of the mould, each measurement midway between the channel sides.

7.3.4 Subtract the highest reading from the lowest reading and record the difference to the nearest 0,5 mm.

8 Test report

The test report shall include the following information:

a) reference to this European Standard;

b) name and type of the cold applied joint sealant;

c) batch of sealant from which the test specimens were produced;

d) test results;

e) any deviations from the specified test conditions;

f) date of test.

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