BRITISH STANDARD

BS EN
14187-5:2003

Cold applied joint sealants —

Part 5: Test method for the determination of the resistance to hydrolysis

The European Standard EN 14187-5:2003 has the status of a British Standard

ICS 93.080.20

National foreword

This British Standard is the official English language version of EN 14187-5:2003.

The UK participation in its preparation was entrusted by Technical Committee B/510, Road materials, to Subcommittee B/510/3, Materials for concrete roads, which has the responsibility to:

— aid enquirers to understand the text;

— present to the responsible international/European committee any enquiries on the interpretation, or proposals for change, and keep the UK interests informed;

— monitor related international and European developments and promulgate them in the UK.

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

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This British Standard, was published under the authority of the Standards Policy and Strategy Committee on 19 June 2003

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English version

Cold applied joint sealants - Part 5: Test method for the determination of the resistance to hydrolysis

Mastics pour joints appliqués à froid - Partie 5: Méthodes d'essai pour la détermination de la résistance à l'hydrolyse

Kalt verarbeitbare Fugenmassen - Teil 5: Prüfverfahren zur Bestimmung der Beständigkeit gegen Hydrolyse

This European Standard was approved by CEN on 25 March 2003.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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Foreword

This document (EN 14187-5:2003) 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of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by March 2005.

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

EN 14187-1, *Cold applied joint sealants — Part 1: Test method for the determination of the rate of cure.*

EN 14187-2, *Cold applied joint sealants — Part 2: Test method for the determination of tack free time.*

EN 14187-3, *Cold applied joint sealants — Part 3: Test method for the determination of self-levelling properties*.

EN 14187-4, *Cold applied joint sealants — Part 4: Test method for the determination of the change in mass and volume after immersion in test fuel.*

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

EN 14187-6, *Cold applied joint sealants — Part 6: Test method for the determination of the adhesion/cohesion properties after immersion in chemical liquids.*

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

EN 14187-8, *Cold applied joint sealants — Part 8: Test method for the determination of the artificial weathering by UV-irradiation*.

prEN 14187-9, *Cold applied joint sealants — Part 9: Function test.*[1)]

No existing European Standard is superseded.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard describes a test method for determining the resistance to hydrolysis of cold applied joint sealants after treatment at elevated temperature and high humidity.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For

1) In preparation.

dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 26927:1990, *Building construction - Jointing products - Sealants - Vocabulary (ISO 6927:1981).*

EN ISO 868, *Plastics and ebonite - Determination of indentation hardness by means of a durometer (shore hardness) (ISO 868:2003).*

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in EN 26927:1990 apply.

4 Principle

Test specimen of the cold applied joint sealant is prepared in a round mould and treated for 14 days in an autoclave at elevated temperature and high humidity. The hardness of the test specimen is recorded before and after treatment at high humidity and temperature.

5 Apparatus and materials

5.1 Round moulds of polyethylene, with a diameter of 50 mm to 70 mm and a depth of 10 mm.

5.2 Autoclave from stainless steel, for treatment of the specimens of the cold applied joint sealant at elevated temperature and high humidity.

5.3 Convection type oven, controllable between 60 °C to 100 °C and accurate to ± 2 °C.

5.4 Apparatus for the measurement of Shore A hardness conforming to EN ISO 868.

6 Preparation of test specimens

Clean the round moulds (see 5.1) and fill with sealant previously conditioned for 24 h at (23 ± 2) °C. The test is carried out with each three test specimens.

The following precautions shall be taken:

¾ avoid the formation of air bubbles;

¾ trim the sealant surface so that it is flush with the border of the round mould.

7 Conditioning

Condition the test specimen for 28 days at (23 ± 2) °C and (50 ± 5) % relative humidity to allow the complete cure.

8 Procedure

8.1 Test temperature

Carry out the test at the following temperatures:

¾ (60 ± 2) °C;

¾ (70 ± 2) °C;

¾ (80 ± 2) °C.

8.2 Test period

Test over a period of 14 days.

8.3 Test procedure

After the conditioning of the test specimen, determine its hardness (Shore A hardness) in accordance with EN ISO 868 (reference value). Fill the autoclave (see 5.2) with water so that there is a layer of water between 20 mm and 50 mm on the bottom. Place the specimens into the autoclave with a support so that they do not touch the water. Close the autoclave (see 5.2) and place it into the convection type oven (see 5.3) for 14 days. During this time the level of the water is controlled regularly.

After this time take the specimens from the autoclave (see 5.2) and condition them for 24 h at (23 ± 2) °C and subject them to the test of Shore A hardness in accordance with EN ISO 868.

8.4 Calculation and expression of results

Calculate the resistance to hydrolysis, H, expressed in percentage in relation to the reference value, using the following equation:

$$H = \frac{H_1}{H_2} \quad 100 \tag{1}$$

where

H is the resistance to hydrolysis, expressed in percent (%);

H_1 is the arithmetic mean of the hardness Shore A of the test specimens before the test procedure;

H_2 is the arithmetic mean of the hardness Shore A of the test specimens after the test procedure.

9 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) time of conditioning of the test specimens;

e) conditioning temperature of the test specimens;

f) value of the resistance to hydrolysis; details of any change of the specimen;

g) any deviations from the specified test conditions;

h) date of test.

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