Hot applied joint sealants —

Part 8: Test method for the determination of the change in weight of fuel resistance joint sealants after fuel immersion

The European Standard EN 13880-8:2003 has the status of a British Standard

ICS 93.080.20

BSi
British Standards

National foreword

This British Standard is the official English language version of EN 13880-8:2003.

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:

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Hot applied joint sealants - Part 8: Test method for the determination of the change in weight of fuel resistance joint sealants after fuel immersion

Produits de scellement de joints appliqués à chaud - Partie 8: Méthode d'essai pour la détermination de la variation de masse après immersion de matières de scellement résistantes aux hydrocarbures

Heiß verarbeitbare Fugenmassen - Teil 8: Prüfverfahren zur Bestimmung der Gewichtsänderung nach Treibstofflagerung

This European Standard was approved by CEN on 2 May 2003.

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Foreword

This document EN 13880-8:2003 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of an identical text or by endorsement, at the latest by February 2004, and conflicting national standards shall be withdrawn at the latest by March 2005.

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.

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

EN 13880-1, Hot applied joint sealants — Part 1: Test method for the determination of density at 25 ° CEN 13880-2, Hot applied joint sealants — Part 2: Test method for the determination of cone penetration at 25 ° C.

EN 13880-3, Hot applied joint sealants — Part 3: Test method for the determination of penetration and recovery (resilience).

EN 13880-4, Hot applied joint selants — Part 4: Test method for the determination of heat resistance — Change in penetration value.

EN 13880-5, Hot applied joint sealants — Part 5: Test method for the determination of flow resistance.

prEN 13880-6, Hot applied joint sealants — Part 6: Test method for the preparation of samples for testing.

EN 13880-7, Hot applied joint sealants — Part 7: Function testing of joint sealants.

EN 13880-8, Hot applied joint sealants — Part 8: Test method for the determination of the change in weight of fuel resistance joint sealants after fuel immersion.

EN 13880-9, Hot applied joint sealants — Part 9: Test method for the determination of compatibility with asphalt pavements.

EN 13880-10, Hot applied joint sealants — Part 10: Test method for the determination of adhesion and cohesion following continuous extension and compression.

EN 13880-11, Hot applied joint sealants — Part 11: Test method for the preparation of asphalt test blocks used in the function test and for the determination of compatibility with asphalt pavements.

EN 13880-12, Hot applied joint sealants — Part 12: Test method for the manufacture of concrete test blocks for bond testing (recipe methods).

EN 13880-13, Hot applied joint sealants — Part 13: Test method for the determination of the discontinuous extension (adherence test).

1 Scope

This European Standard describes a method for determining the joint sealant resistance to fuel spillage by calculating the change in mass, after immersion in the standard reference fuel.

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 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 13880-2, Hot applied joint sealants — Part 2: Test method for the determination of cone penetration at 25 ° C.

prEN 13880-6:2003, Hot applied joint sealants — Part 6: Test method for the preparation of samples for testing.

prEN 14188-1:2001, Joint filler and sealants — Part 1: Specifications for hot applied sealants.

3 Terms and definitions

For the purposes of this European Standard, the terms and definitions given in prEN 14188-1:2001 and prEN 13880-6:2003 apply.

4 Principle

The change in mass of fuel resistant type sealants is measured to verify they do not deteriorate to an unacceptable degree as a result of contact with spilt fuel.

A test specimen is weighed and then placed in a small container together with the standard test fuel. This assembly is then conditioned in a water bath for a period of time, after which the specimen is removed from the small container, dried and re-weighed. The change in mass is calculated and reported accordingly.

5 Apparatus

5.1 Laboratory balance, capable of weighing up to 400 g of sample to an accuracy of 0,01 g.

5.2 Controlled environment, capable of maintaining the prepared specimen and fuel immersion containers at (23 ± 2) ° C.

5.3 Metal container, consisting of a sample tin in which the specimen is tested, cylindrical in shape and having a flat bottom with a capacity of approximately 100 ml. The inside dimensions are nominally 56 mm in diameter and 35 mm in depth. To facilitate pouring the right amount of materials, a mark is made at a depth of approximately 30 mm.

5.4 Small container, manufactured from 1 mm metal sheet with nominal internal dimensions of 150 mm × 150 mm × 150 mm deep with a closely fitting lid which can be sealed with adhesive tape.

5.5 Standard fuel, comprising a mixture of 70 (Vol-%) iso-octane and 30 (Vol-%) industrial grade toluene shall be used according to prEN 13880-2.

5.6 Water bath, having a capacity of at least 10 l with a perforated shelf not less than 50 mm from the bottom of the bath and capable of maintaining the specimen and assembly at the required test temperatures of (50 ± 1) ° C or (35 ± 1) ° C according to prEN 14188-1.

5.7 Electric fan, industrial electric fan with a diameter of 300 m, capable for a stream of air having an average velocity of (120 ± 30) m/min.

5.8 Adhesive tape.

6 Preparation and conditioning of test specimens

6.1 Prepare the test sample according to prEN 13880-6

6.2 Pour the test sample into the metal container taking care to avoid any contamination. Record the actual temperature at the end of pouring.

6.3 Immediately after filling, loosely cover the test metal container and its contents with a lipped beaker of suitable size as a protection against dust and to assist in the elimination of air bubbles. Allow the test specimens to cool in air at a temperature of (23 ± 2) ° C for a period of (1,75 ± 0,25) h.

6.4 Place the test specimens inside the small container, adding the required volume of reference fuel, sealing the container with adhesive tape. Transfer the test assembly to the constant temperature water bath and follow the test procedure.

6.5 For each test, three test specimens shall be prepared.

7 Procedure

7.1 Weigh the test specimen to the nearest 0,01 g and note the initial weight *IW*.

7.2 Place the test specimen in the small container and pour in standard test fuel to a depth of 100 mm, sealing the lid with the adhesive tape.

7.3 Place the sealed container in a water bath at a constant temperature of (50 ± 1) ° C or (35 ± 1) ° C for a period of (24 ± 1) h.

7.4 After removing the test specimens from the fuel, dry the test specimen in a stream of air using an electric fan.

7.5 Weigh the test specimen after drying and record as the final mass *FW*.

8 Calculation and expression of results

Calculate the change in mass *C* from the equation:

$$C = \frac{IW - FW}{IW} \times 100 \qquad (1)$$

where

C is the change in mass, in percent (%);

IW is the initial mass, in grams (g);

FW is the final mass, in grams (g).

The result is the average of the three test specimens. Repeat the test, when the change in mass differs between the three test specimens more than ± 0,3 (% in mass).

9 Precision

Estimate of the repeatability and reproducibility of this test method and of the variability due to sampling are not yet available but will be included by amendment when known.

10 Test report

The test report shall confirm that the test was carried out in accordance with this European Standard and shall include the following information:

a) name of sample;

b) source of sample;

c) batch number and date of manufacture where appropriate or expiry date;

d) date of testing and results obtained;

e) name of the analyst and test laboratory.

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13880-8:2003

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