BRITISH STANDARD

BS EN
13880-5:2004

Hot applied joint sealants —

Part 5: Test method for the determination of flow resistance

The European Standard EN 13880-5:2004 has the status of a British Standard

ICS 93.080.20

BSI
British Standards

National foreword

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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;

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Hot applied joint sealants - Part 5: Test method for the determination of flow resistance

Produits de scellement de joints appliqués à chaud - Partie 5: Méthode d'essai pour la détermination de la résistance au fluage

Heiß verarbeitbare Fugenmassen - Teil 5: Prüfverfahren zur Bestimmung der Fließlänge

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

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Foreword

This document (EN 13880-5:2004) 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of an identical text or by endorsement, at the latest by February 2005, and conflicting national standards shall be withdrawn at the latest by February 2005.

This document 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 C*

EN 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 sealants — 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*

EN 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 testing (recipe methods)*

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

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1 Scope

This document describes a method for determining the flow resistance of hot applied joint sealants.

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

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

ISO 188, *Rubber, vulcanized or thermoplastic — Accelerated ageing and heat resistance tests.*

3 Term and definition

For the purposes of this document, the terms and definitions given in prEN 14188-1 and the following apply.

3.1
flow resistance
movement of the lower transverse edge of the test specimen, following a specified conditioning period

4 Principle

A portion of the test specimen is poured to excess into the metal moulding frame, positioned on the metal plate. After cooling in air the test specimen is trimmed with a heated knife and the metal plate carrying the test specimen is mounted onto a metal stand, the whole assembly is then placed into a controlled environment for 5h. The flow resistance is then calculated by measuring the movement along the lower transverse edge.

5 Apparatus

5.1 Laboratory oven conforming to ISO 188, with low air speed, capable of maintaining the test specimen and apparatus at the test temperature of (60,0 ± 2,5) °C.

5.2 Metal frame comprising a steel frame conforming to Figure 1 with external dimensions (80 ± 1) mm wide × (100 ± 1) mm long and internal dimensions (40 ± 1) mm wide × (60 ± 1) mm long.

5.3 Release agent comprising a mixture of glycerine and dextrine.

Dimensions in millimetres

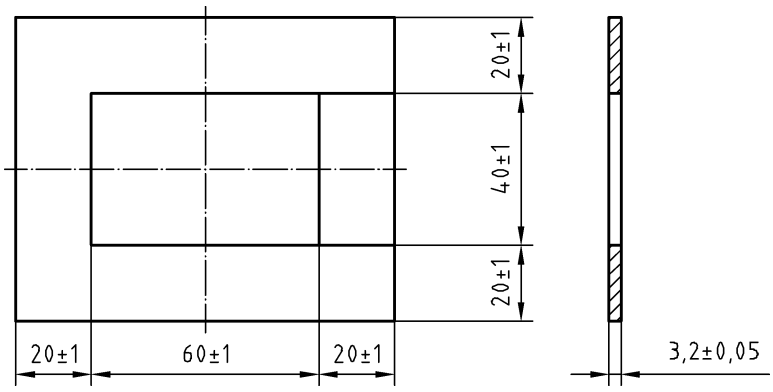
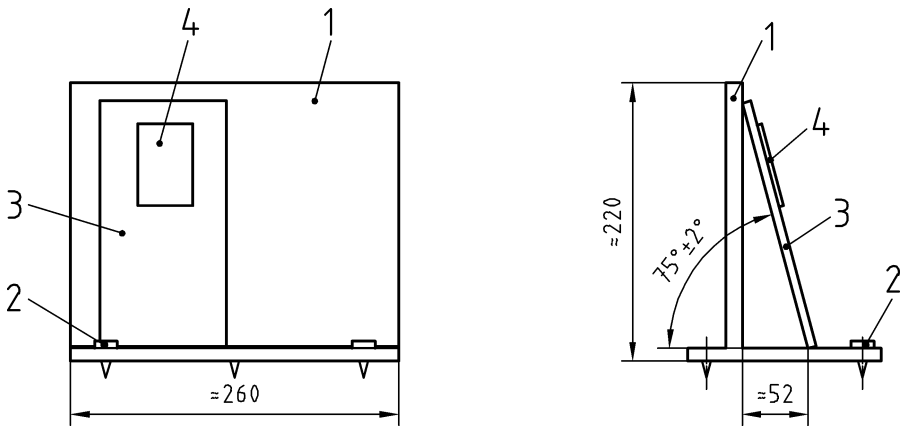


Figure 1 — Mould frame

5.4 Metal plate roughened with sand paper grain 120, (60 ± 1) mm wide × (80 ± 1) mm long × (1,5 ± 0,1) mm thick.

5.5 Metal stand conforming to Figure 2, designed to allow the metal plate containing the test specimen to be mounted so that the longitudinal axis of the test specimen is at an angle of (75 ± 2)° with the horizontal, and the transverse axis is horizontal.

Dimensions in millimetres



Key

1 Stand for metal plate
2 Inclination adjustment screws
3 Metal plate
4 Test specimen

Figure 2 — Examples of stand with test specimen

6 Preparation and conditioning of the test specimens

6.1 Prepare the test specimen according to EN 13880-6

6.2 Treat the inside of the metal frame with the release agent. Place the frame on the metal plate and fill the frame with an excess of the test specimen. Record the actual temperature at the end of pouring.

6.3 After cooling for 1 h in air at standard laboratory conditions, trim the excess test specimen in the frame with a heated knife.

6.4 For each test, two test specimens shall be prepared.

7 Test conditions

The test conditions shall be:

— temperature: (60,0 ± 2,5) °C;

— duration of test: 5 h ± 3 min.

8 Procedure

8.1 Remove the frame and mark the existing profile of the sealant on the metal plate with an index line drawn parallel and along the lower transverse edge of the test specimen.

8.2 Place the metal stand in the oven set at the required test temperature for 30 min before beginning the test.

8.3 Place the metal plate containing the test specimen on the metal stand, mounted so that the longitudinal axis of the test specimen is at an angle of (75 ± 2)° with the horizontal and the transverse axis is horizontal. Maintain the temperature of (60,0 ± 2,5) °C for 5 h ± 3 min.

8.4 After 5 h remove the assembly from the oven and measure the maximum movement of the lower transverse edge of the test specimen below the index line to the nearest 1 mm.

9 Expression of results

Report the flow resistance as the average of the two determinations, rounded to the nearest 1 mm.

10 Precision

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

11 Test report

The test report shall state that the test was carried out in accordance with this document and include the following information:

a) name of test specimen and related primers if used;

b) source of test specimen and relevant primer (if applicable);

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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