SLOVENSKI STANDARD
SIST EN 14187-6:2004

01-junij-2004

Hladno nanosljive tesnilne mase za stike – 6. del: Preskusna metoda za ugotavljanje adhezijskih/kohezijskih lastnosti po namakanju v tekočih kemikalijah

Cold applied joint sealants - Part 6: Test method for the determination of the adhesion/cohesion properties after immersion in chemical liquids

Kalt verarbeitbare Fugenmassen - Teil 6: Prüverfahren zur Bestimmung der Haft- und Dehnungseigenschaften nach Lagerung in flüssigen Chemikalien

Mastics pour joints appliqués a froid - Partie 6 : Méthodes d'essai pour la détermination des propriétés d'adhésivité/cohésion apres immersion dans des liquides chimiques

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ICS:

91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials
93.080.20	Materiali za gradnjo cest	Road construction materials

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EUROPEAN STANDARD

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English version

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

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and United Kingdom.

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Foreword

This document (EN 14187-6:2003) has been prepared 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of an identical text or by endorsement, at the latest by December 2003, and conflicting national standards shall be withdrawn at the latest by March 2005.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.

WARNING — Attention is drawn to the health and safety at work and the need to ensure that this test is carried out under suitable environmental conditions to provide adequate protection to persons against the risk of contact or inhalation of toxic liquid chemicals.

Annex A is informative.

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 specifies a test method to determine the adhesion/cohesion properties after immersion in chemical liquids.

1) In preparation.

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 10002-1, *Metallic materials — Tensile testing — Part 1: Method of test at ambient temperature.*

prEN 13880-12, *Hot applied joint sealants – Test Methods - Part 12: Manufacture of concrete test blocks for bond testing (recipe methods).*

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

EN 28340:1990, *Building construction - Jointing products - Sealants - Determination of tensile properties at maintained extension (ISO 8340:1984).*

3 Terms and definitions

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

4 Principle

The test specimen of the cold applied joint sealant is prepared in which the sealant adheres to two parallel contact surfaces. The test specimen is immersed in specified test liquids and subsequently extended to a defined width. This extension is maintained under defined conditions. Any breaks in adhesion or cohesion are recorded.

5 Apparatus and materials

5.1 Concrete supports in accordance with prEN 13880-12, for the preparation of the test specimens, of dimensions as shown in Figure 1. Two supports are required for each test specimen.

5.2 Spacers of dimensions (12 × 12 × 12,5) mm (see Figure 1) for the preparation of test specimens.

5.3 Anti-adherent substrate, for the preparation of the test specimens.

5.4 Spacers of appropriate dimensions to hold the test specimens extended on 100 % of the original width.

5.5 Tensile testing machine conforming to EN 10002-1, capable of extending the test specimens at a rate of 5 mm/min to 6 mm/min.

5.6 Container for immersion of the test specimens in liquid chemicals, deep enough to provide a minimum of 15 mm of the liquid chemical covering the surface of the specimens.

5.7 Test liquids with compositions as given in Table 1. Instead of test fuel I and test fuel II also jet fuel, hydraulic oil, engine oil, de-icing fluid, glycol or any other liquid chemical can be used as required from the intended application (see annex A).

Table 1 — Composition of test fuels

Chemical liquid	Test fuel I volume in %	Test fuel II volume in %
Isooctane	30	70
Toluene	50	30
Ethanol	5	—
Diisobutylene	15	—

6 Preparation of test specimens

Prepare three test specimens for each test liquid and test temperature at once. Assemble two concrete supports (see 5.1) and two spacers (see 5.2) according to Figure 1 and set up on the anti-adherent substrate (see 5.3).

Follow the instructions of the sealant manufacturer, for instance whether a primer is to be used.

Fill the volume between concrete supports and spacers with sealant, previously conditioned for 24 h at (23 ± 2) °C.

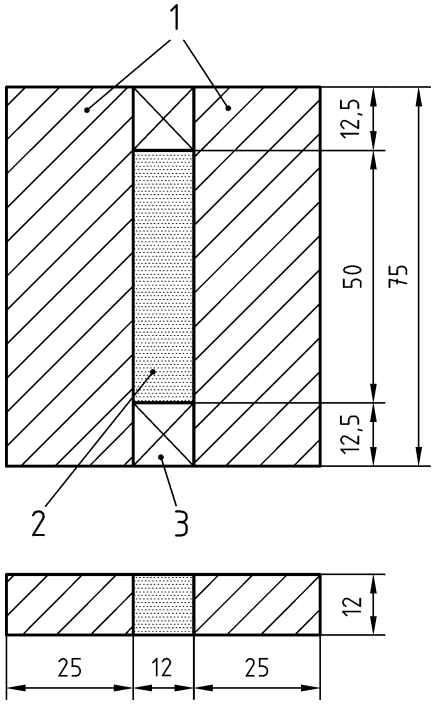
The following precautions shall be taken:

— avoid the formation of air bubbles;

— ensure that no sealant is running out at the bottom;

— trim the sealant surface so that it is flush with the faces of the support and spacers.

Dimensions in millimetres



Key

1 Support from concrete
2 Cold applied joint sealant
3 Spacers

Figure 1 — Test specimen

7 Conditioning

Condition the test specimens in accordance with either method A or method B of EN 28340:1990. If method B is used, after conditioning store the test specimens at least 2 h at (23 ± 2) °C and (50 ± 5) % relative humidity before immersion in test fuel or other liquid chemical.

8 Procedure

8.1 Test fuels

Carry out the test with test fuel I or test fuel II or other liquid chemical as required (see Annex A).

8.2 Temperature of immersion

Carry out the test at one or more of the following temperatures:

— (23 ± 1) °C;

— (35 ± 1) °C;

— (50 ± 1) °C.

8.3 Test period

The period of immersion shall be 24 h, 72 h, 7 days or 21 days.

8.4 Test procedure

After conditioning, immerse the test specimens in accordance with 8.3 in 500 ml test fuel or liquid chemical at the temperature of immersion in the container (see 5.6). Use a covered constant temperature water bath to maintain the container, test fuel and specimens at the required temperature.

Immediately after the period of immersion dry the specimens with a cloth, place in the tensile test machine in accordance with EN 10002-1 (see 5.5) and extend for 100 % of the original width, at a rate of 5 mm/min to 6 mm/min. Maintain this extension for 24 h using the spacers (see 5.2). Record the tensile modulus and/or any breaks in adhesion or cohesion.

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) description of the test liquid;

e) the time and temperature of immersion;

f) note of the appearance of the test specimen (i. e. cracking, delamination);

g) note of the appearance of the test liquid (i. e. discoloration, sedimentation);

h) any deviations from the specified test conditions;

i) test results;

j) date of test.