SLOVENSKI STANDARD
SIST EN 12848:2009

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SIST EN 12848:2003

Bitumen in bitumenska veziva - Doloļ evanje stopnje stabilnosti bitumenskih emulzij z meġanjem s cementom

Bitumen and bituminous binders - Determination of mixing stability with cement of bituminous emulsions

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Mischstabilität von Bitumenemulsionen mit Zement

Bitumes et liants bitumineux - Détermination de la stabilité des émulsions de bitume en mélange avec du ciment

Ta slovenski standard je istoveten z: **EN 12848:2009**

ICS:

75.140	Voski, bitumni in drugi naftni proizvodi	Waxes, bituminous materials and other petroleum products
91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials

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EUROPEAN STANDARD

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Bitumen and bituminous binders - Determination of mixing stability with cement of bituminous emulsions

Bitumes et liants bitumineux - Détermination de la stabilité des émulsions de bitume en mélange avec du ciment

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Mischstabilität von Bitumenemulsionen mit Zement

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Foreword

This document (EN 12848:2009) has been prepared by Technical Committee CEN/TC 336 “Bituminous binders”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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

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1 Scope

This European Standard specifies a method for the determination of mixing stability of bituminous emulsions with cement. It applies to overstabilized cationic bituminous emulsions and to slow-setting and overstabilized anionic bituminous emulsions.

WARNING — The use of this standard can involve hazardous materials, operations and equipment. This standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

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 58, *Bitumen and bituminous binders - Sampling bituminous binders*

EN 197-1, *Cement - Part 1: Composition, specifications and conformity criteria for common cements*

EN 12594, *Bitumen and bituminous binders - Preparation of test samples*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
mixing stability with cement
mass of coagulated material (bitumen + cement) which is produced when a bituminous emulsion is mixed with cement under the test conditions defined in this method

4 Principle

The bituminous emulsion is mixed with cement under specified conditions. The mixture is then poured through a sieve and the amount of material retained on the sieve is weighed.

5 Reagents and materials

Use only reagents of recognised analytical grade and water conforming to grade 3 of EN ISO 3696.

For cement, use a Portland cement CEM I, type R, conforming to EN 197-1.

6 Apparatus

Usual laboratory apparatus and glassware, together with the following:

6.1 Sieve, stainless steel or brass, with a nominal frame diameter from 75 mm to 200 mm and a mesh size of 2,0 mm.

6.2 Sieve, stainless steel or brass, with a nominal frame diameter from 75 mm to 200 mm and a mesh size of 0,16 mm.

6.3 **Sieve pans,** to fit 75 mm to 200 mm diameter sieves.

6.4 **Round bottomed dish,** glass or stainless steel, 500 ml capacity.

6.5 **Graduated cylinder**, 250 ml capacity.

6.6 **Balance,** capable of weighing 500 g, with an accuracy of ± 0,1 g.

6.7 **Glass stirring rod or steel rod,** nominally 5 mm in diameter, with rounded ends.

6.8 **Oven,** thermostatically controlled to (110 ± 5) °C.

6.9 **Stop watch** with an accuracy of 0,2 s or better over a time interval of 300 s.

7 Sampling

The material under test shall be sampled in accordance with EN 58 and prepared in accordance with EN 12594.

8 Procedure

8.1 General

Carry out the procedure under normal laboratory conditions, between 18 °C and 28 °C.

8.2 Sieving of cement

Filter the cement (Clause 5) using the 0.16 mm sieve specified in sub-clause 6.2. Take the cement that passed through the sieve, dry it in the oven (6.8) at (110 ± 5) °C. Keep in a dessicator or a water tight container before the test.

8.3 Test

Wash the 2 mm mesh sieve (6.1) and pan (6.3) and dry them in the oven (6.8) for 30 min. Cool in a dessiccator and weigh the sieve and pan together (m_1).

Weigh (50,0 ± 0,1) g of cement, into the round bottomed dish (6.4). Add 100 ml of the bituminous emulsion test sample and stir immediately for 1 min in a circular motion at the rate of one turn per second. Add 150 ml of water and stir for a further 3 min at the same rate.

Pour the mixture through the 2 mm mesh sieve (6.1), ensuring that all of the mixture is removed from the round bottomed dish by repeatedly washing with water. When all of the mixture has been transferred from the round bottomed dish, rinse the sieve with further water by pouring this from a height of (150 ± 5) mm until the washings are clear.

Fit the sieve onto the pan and dry them in the oven (6.8) for 1 h. Cool in a dessiccator and reweigh. Repeat this procedure until the mass (m_2) is constant (less than 0,1 g difference between weighing).

9 Calculation

Calculate the mixing stability with cement, Sc, of the test sample, in grams, by means of the following equation:

$$S_C = m_2 - m_1$$

where:

m_1 is the mass of the sieve and pan, in grams;

m_2 is the mass of the sieve and pan and sample after drying, in grams.

10 Expression of results

Express the result, obtained in accordance with Clause 9, in grams, rounded to the nearest 0,1 g.

11 Precision

NOTE 1 The precision of the method was evaluated in accordance with EN ISO 4259 [1].

NOTE 2 The precision data are extracted from NF T 66-024 [2].

11.1 Repeatability

The difference between two successive test results, obtained by the same operator with the same apparatus under constant operating conditions on identical test material would, in the long run, in the normal and correct operation of the test method, exceed 0,2 g in only one case in twenty.

11.2 Reproducibility

The difference between two single and independent results obtained by different operators working in different laboratories on identical test material would, in the long run, in the normal and correct operation of the test method, exceed 0,4 g in only one case in twenty.

12 Test report

The test report shall contain at least the following information:

a) type and complete identification of the sample under test;

b) reference to this European Standard;

c) result of the test (see Clause 10);

d) any deviation, by agreement or otherwise, from the procedure specified;

e) date of sampling, date of sample preparation and date of the test.