



SLOVENSKI STANDARD
SIST EN 12849:2009

01-julij-2009

BUXca Yý U
SIST EN 12849:2003

6]li a Yb`]b`V]li a Ybg_Uj Yn]j U!`8 c`c Yj Ub`Y`gdcgcVbcgh`dYbYf]fUb`U
V]li a Ybg_]`Ya i`n]^

Bitumen and bituminous binders - Determination of penetration power of bituminous emulsions

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Eindringfähigkeit von Bitumenemulsion

ITeH STANDARD PREVIEW
(standards.iteh.ai)

Bitumes et liants bitumineux - Détermination du pouvoir de percolation des émulsions de bitume

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>

Ta slovenski standard je istoveten z: EN 12849:2009

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

SIST EN 12849:2009 **en,fr,de**

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 12849:2009

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>

EUROPEAN STANDARD

EN 12849

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2009

ICS 75.140; 91.100.50

Supersedes EN 12849:2002

English Version

Bitumen and bituminous binders - Determination of penetration power of bituminous emulsions

Bitumes et liants bitumineux - Détermination du pouvoir de percolation des émulsions de bitume

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Eindringfähigkeit von Bitumenemulsionen

This European Standard was approved by CEN on 17 February 2009.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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 CEN Management Centre has the same status as the official versions.

iTeh STANDARD PREVIEW

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

[SIST EN 12849:2009](https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009)

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

Page

Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	4
4 Principle.....	4
5 Reagents and materials	4
6 Apparatus	5
7 Sampling.....	6
8 Procedure	6
9 Expression of results	6
10 Precision.....	7
11 Test report	7
Annex A (normative) Characteristics of the Silica Sand Type F 34.....	8
Annex B (normative) Characteristics of the Testing Silica Filler 315-001	9
Bibliography	10

SIST EN 12849:2009

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>

Foreword

This document (EN 12849:2009) 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.

This document supersedes EN 12849:2002.

From the previous edition, new reference filler is now specified; a mixture of silica sand and silica filler is used as reference filler. Characteristics of both silica sand and silica filler are given respectively in normative Annex A and Annex B.

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

[SIST EN 12849:2009](https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009)

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>

EN 12849:2009 (E)

1 Scope

This European Standard specifies a method for the determination of the penetration power of bituminous emulsions, through reference filler.

This test method is applicable to low-viscosity 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 12594, *Bitumen and bituminous binders - Preparation of test samples*

3 Terms and definitions

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

3.1

penetration power

ability of a bitumen emulsion to penetrate into a reference filler

SIST EN 12849:2009

<https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4cca-4459-a25a-60b42217758a/sist-en-12849-2009>

3.2

penetration time

time, in minutes, required for a specified quantity of bituminous emulsion to penetrate into a defined quantity of a reference filler

4 Principle

A specified quantity of the emulsion to be tested is poured onto the reference filler. The time required for the emulsion to penetrate into the filler is measured.

5 Reagents and materials

A mixture of specified silica sand and silica filler is used as the reference filler. In the event of a dispute, the reference filler specified shall be used.

5.1 Sand

The silica sand type F 34¹ shall be used as one of the two components of the reference filler. Characteristics are given in Annex A.

¹ The silica sand type F 34 is the trade name of a product supplied by Quarzwerke GmbH. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of the product name. Equivalent products may be used if they can be shown to lead to the same results, or if a correlation between the products has been established.

5.2 Filler

The testing silica filler 315-001²⁾ shall be used as one of the two components of the reference filler. Characteristics are given in Annex B.

6 Apparatus

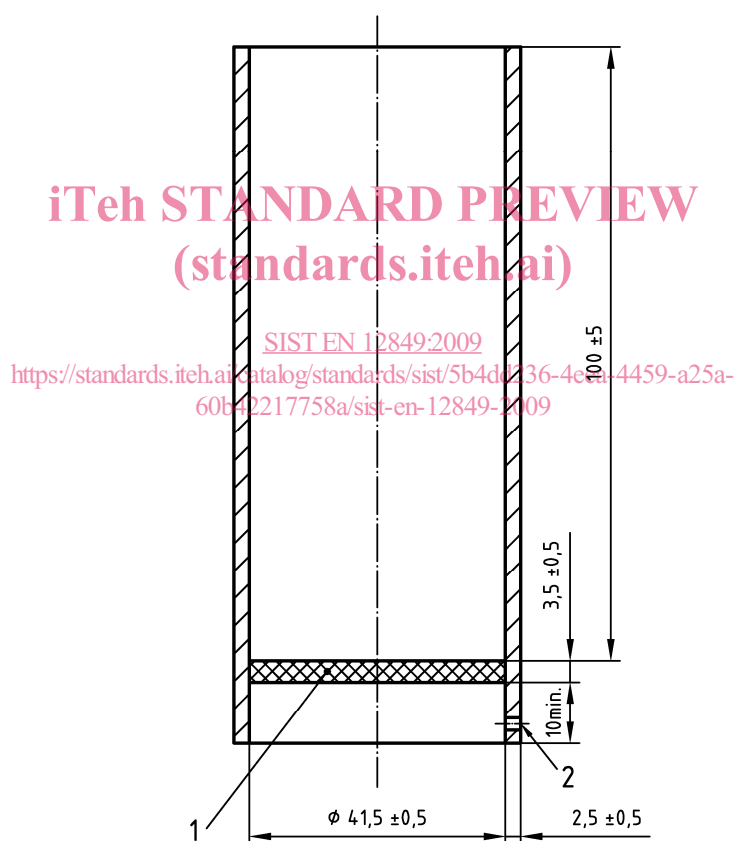
Usual laboratory apparatus and glassware, together with the following:

6.1 Test apparatus, as shown in Figure 1, consisting of a glass tube with fused-on glass filter disc with pore size between 160 μm and 250 μm .

A vent, below the glass filter disc, provides pressure compensation when the test apparatus is charged. The vent shall be cut perpendicular to the vertical axis, with its edges slightly fused.

NOTE The vent can be dispensed with if, during the test procedure, the test apparatus is supported.

Dimensions in millimetres



Key

1. Glass filter disc
2. Vent

Figure 1 — Test apparatus

2) The testing silica filler 315-001 is the trade name of a product supplied by Quarzwerke GmbH. This information is given for the convenience of users of this European Standard and does not constitute an endorsement by CEN of the product name. Equivalent products may be used if they can be shown to lead to the same results, or if a correlation between the products has been established.

EN 12849:2009 (E)

- 6.2 Balance**, capable of weighing 100 g, with an accuracy of $\pm 0,1$ g.
- 6.3 Oven**, capable of being maintained at (110 ± 5) °C.
- 6.4 Wooden board**, 200 mm x 200 mm x 10 mm in size.
- 6.5 Stopwatch**, graduated in divisions of 1 s or less.

7 Sampling

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

The test shall be carried out on two test portions of the sample, each weighing $(10,0 \pm 0,1)$ g (see Clause 8).

8 Procedure

8.1 General

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

8.2 Test

Dry the quantities of silica sand and testing silica filler, required for the test, in the oven (6.3) at a temperature of (110 ± 5) °C until constant mass is reached and cool to ambient temperature in a desiccator.

For each test portion, mix intimately $(50,0 \pm 0,1)$ g of silica sand and $(50,0 \pm 0,1)$ g of testing silica filler and transfer via a funnel to the upper part of the test apparatus (6.1), lifting the funnel with increasing filling height. Level the surface of the filler mixture in the apparatus by knocking the lower edge of the test apparatus three times on the wooden board (6.4).

Place the apparatus on the balance (6.2).

Pour $(10,0 \pm 0,1)$ g of the emulsion to be tested along a glass rod onto the centre of the filler mixture. Pour the entire quantity of emulsion within (10 ± 1) s. Start measuring the time immediately after pouring the emulsion.

Cover the test apparatus using a watch glass.

Determine the time for the emulsion to completely penetrate into the filler mixture, i.e. when the structure of the filler at its upper surface can be clearly recognised. If penetration of the filler mixture is not completed within 20 min, discontinue the test.

Repeat the test procedure using new quantities of filler and emulsion. If the results for both sample portions differ by more than 3 min, repeat the procedure for a third sample portion.

The two values nearest to each other are used to calculate the mean penetration time.

9 Expression of results

Express the individual penetration times and the average penetration time, in minutes, to the nearest integer.

Express the result as the arithmetic mean of the two individual results of penetration time, to the nearest integer.

10 Precision

NOTE The precision of the method was evaluated in accordance with EN ISO 4259 [2].

10.1 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 3 min in only one case in twenty.

10.2 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 6 min in only one case in twenty (provided that both results have been determined within two weeks).

NOTE The source of precision data is DIN 52046 [1].

11 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) reference to the type of apparatus used;
- d) reference to the used sand and filler; [SIST EN 12849:2009](https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009)
- e) result of the test (see Clause 9); <https://standards.iteh.ai/catalog/standards/sist/5b4dd236-4eea-4459-a25a-60b42217758a/sist-en-12849-2009>
- f) any deviation, by agreement or otherwise, from the procedure specified;
- g) date of sampling, date of sample preparation and date of the test.