



# SLOVENSKI STANDARD

## SIST EN 12850:2009

01-julij-2009

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SIST EN 12850:2003

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Bitumen and bituminous binders - Determination of the pH value of bituminous emulsions

Bitumen und bitumenhaltige Bindemittel - Bestimmung des pH-Wertes von Bitumenemulsionen

iTeh STANDARD PREVIEW

Bitumes et liants bitumineux - Détermination du pH des émulsions de bitume

[SIST EN 12850:2009](#)  
Ta slovenski standard je istoveten z: [EN 12850:2009](#)  
[http://www.sist.si/log/standard/sist-en-12850-2009/7f-4673-8dcc-4211add5838c/sist-en-12850-2009](#)

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### 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 12850:2009**

**en,fr,de**

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EUROPEAN STANDARD

EN 12850

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2009

ICS 75.140; 91.100.50

Supersedes EN 12850:2002

English Version

## Bitumen and bituminous binders - Determination of the pH value of bituminous emulsions

Bitumes et liants bitumineux - Détermination du pH des émulsions de bitume

Bitumen und bitumenhaltige Bindemittel - Bestimmung des pH-Wertes 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.

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.

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## Foreword

This document (EN 12850:2009) 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 12850:2002.

From the previous edition, use of any cleaning agent enabling the dissolution of bitumen is now specified.

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.

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**EN 12850:2009 (E)****1 Scope**

This European Standard specifies a method for measuring the pH value of bituminous emulsions.

It is applicable to anionic, cationic bituminous emulsions and bituminous emulsions prepared by means of non – ionic surfactant.

**NOTE** In certain circumstances, the pH value can provide an indication of the ionic character of a bitumen emulsion. However, this indication should be confirmed by a particle polarity test conforming to EN 1430 [1].

**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*

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

ISO 756-1, *Propan-2-ol for industrial use – Methods of test - Part 1: General*

ISO 1388-1, *Ethanol for industrial use – Methods of test - Part 1: General*

ISO 5272, *Toluene for industrial use – Specifications*

ISO 5280, *Xylene for industrial use – Specification*

**3 Terms and definitions**

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

**3.1****pH value**

negative logarithm to the base of 10 of the concentration of hydrogen ions in moles per litre of solution

**4 Principle**

A pH meter and electrode are calibrated using standard buffer solutions. The pH value of the test solution is then determined.

**5 Reagents and materials**

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

**5.1 Xylene or toluene**, conforming respectively to ISO 5280 and ISO 5272, or any cleaning agent enabling the dissolution of the bitumen.

**5.2 Propan-2-ol or preferably ethanol**, conforming respectively to ISO 756-1 and ISO 1388-1.

NOTE If possible, the use of ethanol is preferable.

It is however permissible to use other cleaning agent providing their effectiveness is established. Reference to this shall be made in the test report as appropriate.

**5.3 Standard buffer solutions**, two, one buffer solution with a pH equal to 7,0 (for neutral electric balance), and an other solution getting closer to the expected pH.

**5.4 Potassium chloride solution**, 3 mol/l.

## 6 Apparatus

Usual laboratory apparatus and glassware, together with a pH meter, with pH electrodes (combined or not).

## 7 Sampling

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

## 8 Procedure

Calibrate the pH meter and electrode according to the manufacturer's instructions using the standard buffer solutions (5.3).

Gently stir the emulsion test sample and pour a sufficient quantity into a 250 ml glass beaker.

Adjust the temperature of the emulsion test sample to  $(25 \pm 5)$  °C, if necessary by cooling the sample.

Rinse the electrode with water, wipe it and immerse it in the emulsion test sample to the minimum depth recommended by the manufacturer. Read the indicated pH value when this becomes constant. If the pH value is not constant after 1 min, include this information in the test report. It is possible to indicate the approximate pH.

Remove the electrode from the emulsion test sample and clean it, using the following sequence of operations:

- wash with the aqueous phase of the emulsion if there is some;
- wash with water;
- wash with propan-2-ol or ethanol (5.2);
- wash with xylene or toluene (5.1 or any cleaning agent enabling the dissolution of the bitumen);
- wash with propan-2-ol or ethanol (5.2);
- wash with water.

Store the electrode in the potassium chloride solution (5.4).

NOTE The instructions concerning electrode cleaning and storage are applied if there is no manufacturer's information.

**EN 12850:2009 (E)****9 Expression of results**

Express the pH value to the nearest 0,1 pH unit. If the pH value is not constant after 1 min, report this information in the test report.

**10 Precision**

NOTE The precision of this method has been estimated on the basis of experience. It may be necessary to modify the precision figures when the results of a statistically correct series of tests become available.

**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 0,3 pH unit 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 0,5 pH unit in only one case in twenty.

**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) any deviation, when use of other cleaning agent different than those recommended (see Clause 5);
- d) any variability of pH if it is not stable after one minute (see Clause 9);
- e) result of the test (see Clause 9);
- f) any deviation, by agreement or otherwise, from the procedure specified;
- g) date of sampling, date of sample preparation and date of the test.