



SLOVENSKI STANDARD
SIST EN 12850:2003

01-januar-2003

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

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

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

STANDARD PREVIEW
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Ta slovenski standard je istoveten z: EN 12850:2002

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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 12850:2003

en

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EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12850

May 2002

ICS 75.140; 91.100.50

English version

Bitumen and bituminous binders - Determination of the pH value of bitumen 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 15 February 2002.

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 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 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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document EN 12850:2002 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 November 2002, and conflicting national standards shall be withdrawn at the latest by November 2002.

This European Standard is part of a package including 14 standards: EN 1428, EN 1429, EN 1430, EN 1431, EN 12846, EN 12847, EN 12848, EN 12849, EN 12850, EN 13074, EN 13075-1, EN 13075-2, EN 13614 and EN 13808.

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, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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1 Scope

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

It is applicable to anionic, cationic and non-ionic bitumen emulsions.

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

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 58¹⁾, *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 purpose of this European Standard, the following term and definition apply.

3.1

pH value

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

¹⁾ In course of revision.

EN 12850:2002 (E)**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**5.1 General**

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

5.2 Xylene or toluene, conforming respectively to ISO 5280 and ISO 5272.

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

NOTE If possible, the use of ethanol is preferable.

5.4 Standard buffer solutions, 3 buffer solutions with known pH values between 2 and 10. It is normal to have one of the buffer solutions close to the expected pH.

5.5 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 (5.4).

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

If necessary, cool the emulsion test sample and adjust its temperature to $25\text{ °C} \pm 5\text{ °C}$.

Rinse the electrode with water (5.1) 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 (5.3);
- wash with xylene or toluene (5.2);

- wash with propan-2-ol or ethanol (5.3);
- wash with water.

Store the electrode in the potassium chloride solution (5.5).

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

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, include this information in the test report.

10 Precision

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

10.1 Repeatability

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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.

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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) the type and complete identification of the sample under test;
- b) a reference to this European Standard;
- c) the result of the test (see clause 9);
- d) any deviation, by agreement or otherwise, from the procedure specified;
- e) the date of sampling, the date of sample preparation and the date of the test.

Bibliography

- [1] EN 1430, *Bitumen and bituminous binders - Determination of particle polarity of bitumen emulsions.*

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