



SLOVENSKI STANDARD

SIST EN 12850:2022

01-september-2022

Nadomešča:
SIST EN 12850:2009

Bitumen in bitumenska veziva - Določevanje pH vrednosti bitumenskih emulzij

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

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

Bitumes et liants bitumineux - Détermination du pH des émulsions bitumineuses

Ta slovenski standard je istoveten z: **EN 12850:2022**

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

EN 12850

NORME EUROPÉENNE

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English Version

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

Bitumes et liants bitumineux - Détermination du pH
des émulsions bitumineuses

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

This European Standard was approved by CEN on 13 June 2022.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

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[SIST EN 12850:2022](https://standards.iteh.ai/catalog/standards/sist/77ad7f4f-d09f-423a-ac90-c75d3e0809a8/sist-en-12850-2022)

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

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European foreword

This document (EN 12850:2022) 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 January 2023, and conflicting national standards shall be withdrawn at the latest by January 2023.

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

This document supersedes EN 12850:2009.

The main technical changes are:

- the number of required standard buffer solutions is at least two which bracket the expected pH value to be measured (5.4 and Clause 8);
- the requirement to use certified buffer solutions and to follow manufacturer’s instructions for their verification and storage conditions (5.4);
- the requirement to calibrate according to the manufacturer’s instructions for the used pH meter and with the obligation to test pH = 7 and to frame the expected pH value (Clause 8);
- the requirement that the calibration temperatures are compliant with those indicated for each buffer solution (Clause 8).

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

EN 12850:2022 (E)

1 Scope

This document 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 bituminous emulsion when confirmed by a particle polarity test conforming to EN 1430 [1].

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

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3696:1995, *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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <https://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

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

5.1 Water, conforming to grade 3 of EN ISO 3696:1995.

5.2 Xylene or toluene, or any cleaning agent enabling the dissolution of the bitumen. Use general purpose reagents.

5.3 Ethanol or propan-2-ol. Use general purpose reagents.

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.

5.4 Standard buffer solutions

Buffer solutions need to be certified by the suppliers and stored and verified according to their instructions.

5.4.1 Standard buffer solutions, at least two for the pH range 0 to 7, of which one buffer solution with a pH equal to 7,0.

5.4.2 Standard buffer solutions, at least two for the pH range 7 to 14, of which one buffer solution with a pH equal to 7,0.

5.4.3 Standard buffer solutions, at least three for the pH range 0 to 14, of which one buffer solution with a pH equal to 7,0.

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). The set of standard buffer solutions (including one for a pH value of 7,0) shall be selected among those proposed by the supplier of the pH meter and shall allow the bracketing of the expected pH value.

NOTE The calibration can be checked by using a buffer solution of intermediate pH value.

The calibration temperature shall be compliant with the one indicated for the buffer solution.

The above does not apply for pH meters equipped with temperature compensation: in this case the temperature of the buffers used for the calibration of the pH meter should correspond to the temperature for "Normal laboratory conditions", i.e. at temperature of (23 ± 5) °C.

Calibration shall be done regularly and ideally before each new series of measurements.

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 (23 ± 5) °C (corresponding to "Normal laboratory conditions"), 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.