



**SLOVENSKI STANDARD**  
**kSIST prEN 12850:2008**

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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

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

**Ta slovenski standard je istoveten z: prEN 12850**

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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

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**en,fr,de**



EUROPEAN STANDARD  
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**prEN 12850**

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ICS 75.140; 91.100.50

Will supersede 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

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## Foreword

This document (prEN 12850:2008) has been prepared by Technical Committee CEN/TC 336 “Bituminous binders”, the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

This document will supersede EN 12850:2002.

## prEN 12850:2008 (E)

### 1 Scope

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

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 allowed 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**, 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.

**5.4 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.

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

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.

## 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.

**prEN 12850:2008 (E)****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**

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.