SLOVENSKI STANDARD
SIST EN 13303:2003

01-december-2003

Bitumen in bitumenska veziva - Določanje izgube mase industrijskih bitumnov po segrevanju

Bitumen and bituminous binders - Determination of the loss in mass after heating of industrial bitumen

Bitumen und bitumenhaltige Bindemittel - Bestimmung des Masseverlustes von Industriebitumen nach Erwärmung

Bitumes et liants bitumineux - Détermination de la perte de masse au chauffage des bitumes industriels

Ta slovenski standard je istoveten z: **EN 13303:2003**

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 13303:2003 **en**

EUROPEAN STANDARD

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ICS 75.140; 91.100.50

English version

Bitumen and bituminous binders - Determination of the loss in mass after heating of industrial bitumen

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This European Standard was approved by CEN on 17 January 2003.

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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.

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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

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Foreword

This document (EN 13303:200) 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of an identical text or by endorsement, at the latest by October 2003, and conflicting national standards shall be withdrawn at the latest by October 2003.

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

Annex A is normative.

1 Scope

This European Standard specifies a method for the determination of the loss in mass of industrial bitumen after heating. The method is used to detect volatile components.

WARNING — The use of this standard may 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 to 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 58, *Sampling bituminous binders*.

EN 1426, *Bitumen and bituminous binders - Determination of needle penetration*.

EN 12594, *Bitumen and bituminous binders - Preparation of test samples*.

3 Terms and definitions

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

3.1
loss on heating
ratio between the loss of mass of a heated sample and its initial mass, expressed as a percentage of the latter

4 Principle

A weighed sample is heated for a specified time at a specified temperature and is re-weighed at the conclusion of the heating period.

5 Apparatus

5.1 Oven, electrically heated and conforming to the performance requirements for ovens ventilated by natural convection and for operating temperatures up to 180 °C.

The oven shall be rectangular with minimum interior dimensions of 330 mm in each direction. The oven shall have in front a tightly fitting hinged door, which shall provide a clear opening, substantially the same as the interior height and width of the oven. The door may contain a window with dimensions of at least 100 mm x 100 mm, and with two sheets of glass separated by an air space, through which a vertical thermometer (5.3) located as specified in 7.8, may be read without opening the door, or the oven may be provided with an inner glass door through which the thermometer may be observed on opening the outer door momentarily.

The oven shall be adequately ventilated by convection currents of air and for this purpose shall be provided with openings for the entrance of ambient air and regress of heated air and vapours. These openings may be of any size and arrangement provided the temperature requirements of the test are met.

5.2 Rotating shelf (see Figure 1)

The oven shall be provided with a circular metal shelf having a minimum nominal diameter of 250 mm. The shelf shall be suspended by a vertical shaft and centred with respect to the horizontal interior dimensions. The shelf shall be provided with a mechanical means of rotating it at the rate of 5 rpm to 6 rpm. The shelf shall be vertically located as close to the centre of the oven as permitted by compliance with the requirements of the procedure regarding thermometer placement.

Dimensions in millimetres

Tolerances not mentioned in the figure = 0,5 mm

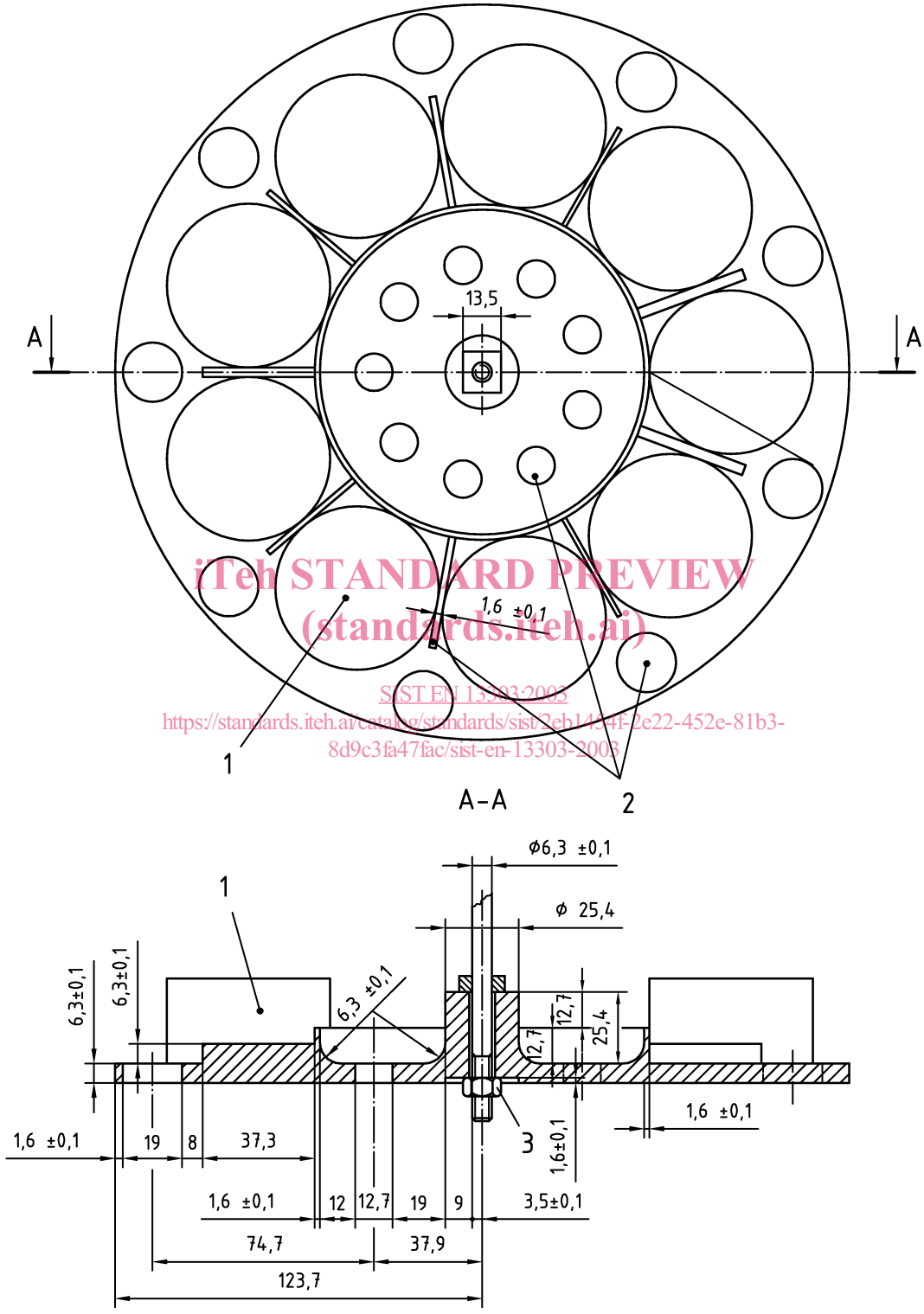

Figure 1 — Aluminum shelf

Key

1 Position of boxes
2 9 holes and ribs spaced equally
3 Nut of 6

5.3 **Thermometer**, in accordance with Annex A.

Other temperature devices may be used instead of mercury stem thermometers. However, the mercury stem thermometer is the reference device. Therefore any alternative device employed shall be calibrated so as to provide the same readings as would be provided by the mercury stem thermometer, recognising and allowing for the fact of changed thermal response times compared with the mercury thermometer.

5.4 **Test sample container**, metal or glass, cylindrical in shape, and with a flat bottom.

The inside dimensions shall be approximately: diameter, 55 mm and depth, 35 mm i.e. conforming to the dimensions of container A in EN 1426.

5.5 **Balance,** with a reading accuracy of 0,01 g.

6 Sampling

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

7 Procedure

7.1 Weigh the container (5.4) and record the mass, m_c, to the nearest 0,01 g reading.

7.2 Place 50,0 g ± 0,5 g of the sample of the material to be tested in the container. Weigh the container and the sample, and record the mass, m_1, to the nearest 0,01 g reading. Carry out the test on duplicate samples.

7.3 If the sample has been heated to facilitate its transfer, cool the container and sample to ambient temperature before making the initial weighing (see 7.2).

7.4 Bring the oven to a temperature of 163 °C.

7.5 Place the container with the weighed sample on the circular shelf into one of the recesses.

7.6 Close the oven and rotate the shelf for the duration of the test at a rate of 5 rpm to 6 rpm.

7.7 Maintain the oven temperature at 163 °C ± 1 °C for 5 h after the samples have been introduced. The 5 h period commences when the temperature reaches 162 °C, and ensure that, in no case, the total time that a sample is in the oven exceeds 5 h and 15 min.

7.8 Determine the oven temperature by means of the specified thermometer (5.3), which is placed in a vertical position approximately 19 mm inside the periphery of the shelf, and with the bottom of the thermometer bulb 6 mm above the shelf. If an electrical thermometer is used it should be placed parallel to the shaft in the same position as before but not rotated.

7.9 At the conclusion of the heating period, remove the sample from the oven.

7.10 Cool the sample to room temperature under a cover protecting it from dust (e.g. dessiccator).

7.11 Weigh the container and the sample. Record the mass, m_2, to the nearest 0,01 g reading.

7.12 It is permissible to carry out multiple tests simultaneously.