SLOVENSKI STANDARD
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Bituminizirane zmesi - Preskusne metode - 47. del: Ugotavljanje deleža pepela v naravnem asfaltu

Bituminous mixtures - Test methods - Part 47: Determination of the ash content of natural asphalts

Asphalt - Prüfverfahren - Teil 47: Bestimmung des Aschegehaltes von Naturasphalt

Mélanges bitumineux - Méthodes d'essai pour mélange hydrocarboné à chaud - Partie 47 : Détermination de la teneur en cendres des bitumes naturels

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Bituminous mixtures - Test methods - Part 47: Determination of the ash content of natural asphalts

Mélanges bitumineux - Méthodes d'essai pour mélange hydrocarboné à chaud - Partie 47 : Détermination de la teneur en cendres des bitumes naturels

Asphalt - Prüfverfahren - Teil 47: Bestimmung des Aschegehaltes von Naturasphalt

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

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European foreword

This document prEN 12697-47:2020 has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 12697-47:2010.

The main changes compared to the previous edition are listed below:

— the title no longer refers to hot mix asphalt;

— [ge] editorial update according to current standard template;

— in Clause 2 the introductory sentence has been amended according to CEN(CENELEC Internal Regulations Part 3:2019;

— in Clause 2 introductory sentence has been amended according to CEN(CENELEC Internal Regulations Part 3:2019;

A list of all parts in the EN 12697 series can be found on the CEN website.

1 Scope

This document describes a test method to determine the ash content in natural asphalts (including lake asphalts), binders containing natural asphalts or bitumens. For the method to apply, it is essential that any mineral matter in the binder be finely divided and cannot exceed 45 % by mass.

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*

3 Terms and definitions

For the purpose 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
ash
inorganic residue remaining after ignition at 650 °C expressed as a proportional mass of the original sample

3.2
natural asphalt
highly viscous liquid or semi-solid materials found in nature and containing varying amounts of bitumen, as defined by solubility in carbon disulphide, that can be used in asphalt

4 Principle

A sample of the natural asphalt is weighed into a crucible which is then gently heated until fuming ceases. The sample is then ignited at (650 ± 50) °C until free from carbon.

5 Apparatus

5.1 Silica, porcelain or platinum crucible, with a capacity of (120 ± 20) ml.

5.2 Furnace, capable of heating the crucible to (650 ± 50) °C in a natural draft of air.

NOTE An electrical muffle furnace is suitable for this purpose.

5.3 Desiccator (or other suitable container).

5.4 Gas burner, pipe-clay triangle and tripod.

NOTE An electric pre-incinerator can be used instead of a gas burner.

5.5 Oven, capable of heating the material to 90 °C above its softening point (optional).

5.6 Balance, of suitable capacity.

5.7 Spatula (optional).

5.8 4 mm sieve (optional).

6 Sample preparation

6.1 Obtain a representative sample, basing sampling on the specifications given in EN 58.

6.2 For materials that can be crushed at ambient temperature (e.g. refined lake asphalt), break up at least 500 g of the material so that it can pass through the 4 mm sieve.

6.3 For materials that cannot be crushed at ambient temperature but can be softened by heating in an oven, heat the material in the oven to approximately 80 °C to 90 °C above its expected softening point, and then carefully stir with the spatula until it is probable that any mineral matter present is uniformly dispersed.

NOTE 1 The method of obtaining the test sample from the sample sent to the laboratory will depend upon the type of bituminous material under examination.

NOTE 2 After either method of sample preparation, the material is then in a suitable condition for weighing into the crucible.

7 Procedure

7.1 Heat the crucible in the furnace at (650 ± 50) °C for at least 10 min. Place the crucible in the desiccator (or other suitable container) and allow to cool to room temperature. Weigh the crucible to the nearest 0,005 g as m_1.

7.2 Place in the crucible sufficient sample, prepared in accordance with Clause 6, to yield a mass of ash of not less than 0,10 g and not more than 0,35 g. Weigh the crucible and sample to the nearest 0,005 g as m_2.

7.3 Heat the crucible gently using a low flame of the bunsen burner until fumes cease to be evolved. Then heat the crucible and contents in the furnace to (650 ± 50) °C until no more carbon is visible in the sample and the weight of the sample is constant. Place the crucible and contents in the desiccator (or other suitable container) and allow to cool to room temperature. Weigh the crucible and contents to the nearest 0,005 g.

7.4 Reheat the crucible and contents in the furnace to (650 ± 50) °C for (25 ± 5) min. Place the crucible and contents in the desiccator (or other suitable container) and allow it to cool to room temperature. Weigh the crucible and contents to the nearest 0,005 g.

7.5 Repeat 7.4 until constant mass is achieved as demonstrated by consecutive weightings differing by not more than 0,005 g. Define this reading as m_3.