Bitumen and bituminous binders - Determination of the resistance to hardening under influence of heat and air - Part 2: TFOT Method

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EESTI STANDARDI EESSÕNA **NATIONAL FOREWORD**

Käesolev Eesti standard EVS-EN 12607-2:2007 sisaldab Euroopa standardi EN 12607-2:2007 ingliskeelset teksti. Käesolev dokument on jõustatud 20.04.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes. Standard on kättesaadav Eesti standardiorganisatsioonist.	This Estonian standard EVS-EN 12607-2:2007 consists of the English text of the European standard EN 12607-2:2007. This document is endorsed on 20.04.2007 with the notification being published in the official publication of the Estonian national standardisation organisation. The standard is available from Estonian standardisation organisation.

Käsitlusala: This European Standard describes a method for measuring the combined effects of heat and air on a film of bitumen or bituminous binder, simulating the hardening which a bituminous binder undergoes during mixing in an asphalt mixing plant.	**Scope:** This European Standard describes a method for measuring the combined effects of heat and air on a film of bitumen or bituminous binder, simulating the hardening which a bituminous binder undergoes during mixing in an asphalt mixing plant.

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English Version

Bitumen and bituminous binders - Determination of the resistance to hardening under the influence of heat and air - Part 2: TFOT Method.

Bitumes et liants bitumineux - Détermination de la résistance au durcissement sous l'effet de la chaleur et de l'air - Partie 2 : Méthode TFOT

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Beständigkeit gegen Verhärtung unter Einfluss von Wärme und Luft - Teil 2: TFOT-Verfahren

This European Standard was approved by CEN on 3 February 2007.

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 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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 12607-2:2007) 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 September 2007, and conflicting national standards shall be withdrawn at the latest by September 2007.

This document supersedes EN 12607-2:1999.

This European standard EN 12607 consists of the following parts under the general title: *Bitumen and bituminous binders – Determination of the resistance to hardening under the influence of heat and air*

Part 1: RTFOT method

Part 2: TFOT method

Part 3: RFT method

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

1 Scope

This European Standard describes a method for measuring the combined effects of heat and air on a film of bitumen or bituminous binder, simulating the hardening that a bituminous binder undergoes during mixing in an asphalt mixing plant.

The method is referred to as TFOT, i.e. Thin Film Oven Test.

WARNING — 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 to determine the applicability of regulatory limitations prior to use.

If there is a likelihood of volatile components being present in a binder, this procedure should not be used. It should not be used for cutback bitumen or bituminous emulsions before these products have been stabilised, e.g. in accordance with EN 14895.

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 1425, *Bitumen and bituminous binders - Characterization of perceptible properties*

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

EN 12595, *Bitumen and bituminous binders - Determination of kinematic viscosity*

3 Principle

A film of bituminous binder is heated in an oven at a specified temperature for a given period of time.

The effects of heat and air are determined based on the change in mass (expressed as a percentage) and on the change in the bituminous binder's properties such as kinematic viscosity (EN 12595), before and after the period in the oven.

NOTE Penetration (EN 1426) and softening point (EN 1427) can be measured on harder grades before and after oven treatment at 163 °C.

4 Apparatus

Usual laboratory apparatus and glassware, together with the following:

4.1 Oven, electrically heated and conforming to the performance requirements indicated in Table 1 for operating temperatures up to 180 °C.

The oven shall be rectangular with a minimum interior height, width and depth of 330 mm.

The front door shall be hinged and tightly fitted, and have a clear opening of the same height and width as the interior of the oven. The window on the door shall be at least 100 mm by 100 mm, with two sheets of glass separated by an air space. The window shall permit an unobstructed view of the interior of the oven so that the control thermometer, located as specified in 6.1 may be read without opening the door.