

Bitumens and bituminous binders - Determination of the resistance to hardening under influence of heat and air - Part 1: RTFOT method

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12607-1:2024 sisaldab Euroopa standardi EN 12607-1:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 13.11.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12607-1:2024 consists of the English text of the European standard EN 12607-1:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 13.11.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

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English Version

Bitumens and bituminous binders - Determination of the resistance to hardening under influence of heat and air - Part 1: RTFOT method

Bitumes et liants bitumineux - Détermination de la résistance au durcissement sous l'effet de la chaleur et de l'air - Partie 1 : Méthode RTFOT

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Beständigkeit gegen Verhärtung unter Einfluss von Wärme und Luft - Teil 1: RTFOT-Verfahren

This European Standard was approved by CEN on 16 September 2024.

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European foreword

This document (EN 12607-1:2024) has been prepared by Technical Committee CEN/TC 336 “Bitumens and 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of an identical text or by endorsement, at the latest by May 2025, and conflicting national standards shall be withdrawn at the latest by May 2025.

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 12607-1:2014.

EN 12607-1:2024 includes the following significant changes with respect to EN 12607-1:2014:

- a) Clause 1, Scope, has been revised and expanded;
- b) Clause 2, Normative references, has been updated;
- c) Clause 3, Terms and Definitions, has been added;
- d) Clause 4, Principle, has been revised for clarification purposes and the reference duration of the RTFOT method has been added;
- e) Clause 5, Apparatus, together with the Figures 1 to 3, has been revised and completed;
- f) Clause 6, Calibration and verification, has been added including the former requirements regarding the RTFOT oven and the temperature measuring device;
- g) the former subclause-structure of Clause 7, Sampling, has been removed and the former subclause 5.3, Initial Characteristics, has been removed;
- h) the titles of the subclauses of Clause 8, Procedure, have been changed for clarification purposes;
- i) Clause 12, Test report, has been revised;
- j) Annex B has been added;
- k) the Bibliography has been updated.

A list of all parts in the EN 12607 series, published under the general title *Bitumens and bituminous binders — Determination of the resistance to hardening under the influence of heat and air*, can be found on the CEN website.

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.

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1 Scope

This document specifies a method for the conditioning of bitumen or bituminous binders in order to provide for measuring the combined effects of heat and air on a thin moving film of bitumen or bituminous binder simulating the hardening which most bituminous binders undergo during mixing in an asphalt mixing plant. The method is referred to as RTFOT – Rolling Thin Film Oven Test.

The method described is applicable to paving grade bitumen. The method described is also applicable to other bituminous binders considering that the reference temperature can result in excessive hardening that does not resemble real conditions during mixing at the plant. It is possible that the method does not represent the hardening that occurs during mixing bitumen used for warm mix asphalt.

The method described is not applicable to those binders having a viscosity at the tested temperature not allowing to provide a moving film. In some cases, it is possible that the test sample creeps out of the glass container and flows on the heating elements of the oven during testing.

The method described is not applicable to binders with volatiles components present. In case of cutback bitumen or bituminous emulsion, the described procedure is only applicable after being stabilized, e.g. in accordance with EN 13074-2 [9].

WARNING — 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 identify the hazards and assess the risks involved in performing this test method and to implement sufficient control measures to protect individual operators (and the environment). This includes appropriate safety and health practices and determination of 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 1425, *Bitumen and bituminous binders — Characterization of perceptible properties*

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

EN 12597, *Bitumen and bituminous binders — Terminology*

EN 12735-1, *Copper and copper alloys — Seamless, round tubes for air conditioning and refrigeration — Part 1: Tubes for piping systems*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12597 apply.

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

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