

STN	Asfalty a asfaltové spojivá Stanovenie odolnosti proti tvrdnutiu pôsobením tepla a vzduchu Časť 1: RTFOT metóda	STN EN 12607-1 65 7070
------------	------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------

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

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/25

Obsahuje: EN 12607-1:2024

Oznámením tejto normy sa ruší
STN EN 12607-1 (65 7070) z mája 2015

139871

Úrad pre normalizáciu, metrológiu a skúšobníctvo Slovenskej republiky, 2025
Slovenská technická norma a technická normalizačná informácia je chránená zákonom č. 60/2018 Z. z. o technickej normalizácii v znení neskorších predpisov.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 12607-1

November 2024

ICS 91.100.50

Supersedes EN 12607-1:2014

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.

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-CENELEC 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-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 12607-1:2024 (E)

Contents	Page
European foreword	3
1 Scope.....	4
2 Normative references.....	4
3 Terms and definitions	4
4 Principle	5
5 Apparatus	5
6 Calibration and verification.....	10
7 Sampling.....	11
8 Procedure	11
8.1 General.....	11
8.2 RTFOT conditioning.....	11
8.3 Testing after RTFOT conditioning	12
9 Calculation.....	13
10 Expression of results	14
11 Precision	15
11.1 Repeatability, r	15
11.2 Reproducibility, R.....	15
12 Test report.....	15
Annex A (informative) Characteristics of the former reference thermometer	16
Annex B (informative) Verification of the temperature homogeneity in the RTFOT oven	17
B.1 General.....	17
B.2 Metrological principles.....	17
B.3 Experience-based methods for temperature mapping.....	18
Bibliography	20

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.

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

EN 12607-1:2024 (E)**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*

koniec náhľadu – text ďalej pokračuje v platenej verzii STN