



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 12593**

July 2015

ICS 75.140; 91.100.50

Supersedes EN 12593:2007

English Version

**Bitumen and bituminous binders - Determination of the Fraass  
breaking point**

Bitumes et liants bitumineux - Détermination du point de  
fragilité Fraass

Bitumen und bitumenhaltige Bindemittel - Bestimmung des  
Breachpunktes nach Fraaß

This European Standard was approved by CEN on 27 May 2015.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

## Contents

Page

Foreword.....	3
1 Scope .....	4
2 Normative references .....	4
3 Terms and definitions .....	4
4 Principle .....	4
5 Apparatus .....	4
6 Sampling and sample preparation .....	6
6.1 General.....	6
6.2 Test plate preparation .....	6
6.3 Coating test plates.....	6
7 Procedure .....	7
7.1 Test conditions .....	7
7.2 Measurement.....	7
7.2.1 Manual or semi-automatic apparatus .....	7
7.2.2 Fully automatic apparatus .....	8
7.3 Determination of the Fraass breaking point .....	8
8 Expression of results .....	8
9 Precision .....	8
9.1 Repeatability.....	8
9.2 Reproducibility.....	8
10 Test report .....	9
11 Figures .....	9
Annex A (informative) Characteristics of the thermometer .....	15
Annex B (informative) Examples.....	16

## Foreword

This document (EN 12593:2015) has been prepared by Technical Committee CEN/TC 336 "Bituminous binders", the secretariat of which is held by AFNOR.

This document supersedes EN 12593:2007.

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 January 2016, and conflicting national standards shall be withdrawn at the latest by January 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

There are three major changes in this revised standard compared to the former version.

- the standard has been revised due to a normative reference to mercury thermometers. The changes involve mainly the text in 5.3.3 and the present Annex A is now informative;
- regarding sample preparation the procedure for press-application of sample has been deleted, and the maximum sample preparation time of 10 min has been moved from an informative note to the normative text;
- the explanation for determination of Fraass breaking point in the former 7.3 and 7.4 have been editorial changed into the present 7.3 and a flow diagram in a new Figure 7.

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**EN 12593:2015 (E)****1 Scope**

This European Standard specifies a method for determining the Fraass breaking point which measures the brittleness of bitumen and bituminous binders at low temperatures.

**WARNING — Use of this European Standard can involve hazardous materials, operations and equipment. This European Standard does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this European Standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.**

**2 Normative references**

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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 1427, *Bitumen and bituminous binders - Determination of the softening point - Ring and Ball method*

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

**koniec náhľadu – text ďalej pokračuje v platenej verzii STN**