

This document is a preview generated by EVS

Bitumen and bituminous binders - Determination of the tensile properties of bituminous binders by the tensile test method

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 13587:2016 sisaldab Euroopa standardi EN 13587:2016 ingliskeelset teksti.	This Estonian standard EVS-EN 13587:2016 consists of the English text of the European standard EN 13587:2016.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 23.11.2016.	Date of Availability of the European standard is 23.11.2016.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile [standardiosakond@evs.ee](mailto:standardiosakond@evs.ee).

ICS 75.140, 91.100.50

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardikeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardikeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardikeskusega:  
Koduleht [www.evs.ee](http://www.evs.ee); telefon 605 5050; e-post [info@evs.ee](mailto:info@evs.ee)

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation:

Homepage [www.evs.ee](http://www.evs.ee); phone +372 605 5050; e-mail [info@evs.ee](mailto:info@evs.ee)

English Version

## Bitumen and bituminous binders - Determination of the tensile properties of bituminous binders by the tensile test method

Bitumes et liants bitumineux - Détermination des caractéristiques de traction des liants bitumineux par la méthode d'essai de traction

Bitumen und bitumenhaltige Bindemittel - Bestimmung der Streckeigenschaften von bitumenhaltigen Bindemitteln mit dem Zugprüfverfahren

This European Standard was approved by CEN on 22 July 2016.

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**

<b>Contents</b>		Page
<b>European foreword</b> .....		3
<b>1</b>	<b>Scope</b> .....	4
<b>2</b>	<b>Normative references</b> .....	4
<b>3</b>	<b>Terms and definitions</b> .....	4
<b>4</b>	<b>Principle</b> .....	5
<b>5</b>	<b>Apparatus</b> .....	5
<b>6</b>	<b>Preparation and conservation of samples</b> .....	7
<b>7</b>	<b>Procedure</b> .....	7
<b>8</b>	<b>Calculation and expression of results</b> .....	7
<b>9</b>	<b>Precision</b> .....	8
<b>10</b>	<b>Test report</b> .....	9
<b>Annex A (normative) Cohesion specification criteria</b> .....		10
<b>Bibliography</b> .....		11

## European foreword

This document (EN 13587:2016) has been prepared by Technical Committee CEN/TC 336 “Bituminous binders”, the secretariat of which is held by AFNOR/BNPé.

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 2017, and conflicting national standards shall be withdrawn at the latest by May 2017.

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 13587:2010 and EN 13703:2003.

This document contains the following changes compared to EN 13587:2010:

- updated normative references;
- additional terms and definitions;
- deleting determination of deformation energy by EN 13703;
- introduction of calculation methods of deformation energy in the standard;
- updated bibliography;
- combining time frame EN 13589 with EN 13587;
- renaming “conventional energy” into “cohesion energy”;

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.

## 1 Scope

This European Standard specifies a method for determining the tensile properties of a bituminous binder, in particular those of a polymer modified bitumen, by means of a tensile test.

**NOTE** The tensile properties, more particularly the tensile stress, the elongation and energy, at the yield point and on fracture, are customarily used as a criterion for assessing the quality of these materials.

**WARNING** — The use of this European Standard may 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 12594, *Bitumen and bituminous binders — Preparation of test samples*

EN ISO 527 (all parts), *Plastics — Determination of tensile properties*

ISO 5893, *Rubber and plastics test equipment — Tensile, flexural and compression types (constant rate of traverse) — Specification*

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

### 3.1 tensile force

force undergone by a specimen subjected to extension, expressed in Newton (N)

### 3.2 elongation

increase in length of a specimen, expressed in metres

Note 1 to entry: Elongation is also expressed in % from the initial length. It is calculated as  $[(\text{new length} - \text{initial length})/\text{initial length}] \times 100$ .

### 3.3 brittle break

rupture happening at the beginning of the test before the flowing threshold when the stress-strain curve is still linear

### 3.4 flow threshold

first maximum of the stress-strain curve