

Bituminous mixtures - Test methods - Part 44: Crack
propagation by semi-circular bending test

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12697-44:2019 sisaldab Euroopa standardi EN 12697-44:2019 ingliskeelset teksti.	This Estonian standard EVS-EN 12697-44:2019 consists of the English text of the European standard EN 12697-44:2019.
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.
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Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

Bituminous mixtures - Test methods - Part 44: Crack propagation by semi-circular bending test

Mélanges bitumineux - Méthodes d'essai - Partie 44 :
Propagation de fissure par essai de flexion d'un bloc
semi-circulaire

Asphalt - Prüfverfahren - Teil 44: Bestimmung der
Rissausbreitung mittels Halbzyylinder-Biegeversuch

This European Standard was approved by CEN on 19 November 2018.

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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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 12697-44:2019) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by BSI.

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of an identical text or by endorsement, at the latest by September 2019, and conflicting national standards shall be withdrawn at the latest by September 2019.

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 12697-44:2010.

The following is a list of significant technical changes since the previous edition:

- The series title no longer makes the method exclusively for hot mix asphalt;
- [6.10] Tolerance for notch width amended to $(0,40 \pm 0,20)$ mm;
- [7.1.2]; [7.1.3]; [7.1.4] Addition of tolerance for height of specimen: (74 ± 1) mm;
- [7.1.6] Tolerance for notch width amended to $(0,40 \pm 0,20)$ mm in accordance with 6.10;
- [9.4] Formulae (2) to (4) amended. Formula (5) deleted and (6) renumbered to (5).

A list of all parts in the EN 12697 series 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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the Semi-Circular Bending (SCB) test method to determine the tensile strength or fracture toughness of an asphalt mixture for the assessment of the potential for crack propagation. The results of the test can be used to calculate:

- the maximum load that the material containing a notch (crack) can resist before failure;
- when the presence of a notch is critical.

It should be noted that the test only describes a method to determine the resistance to crack propagation of an asphalt mixture. The crack propagation phase describes the second part of failure mechanism during dynamic loading. The first phase, which is the crack initiation phase, is mainly covered by the fatigue test (EN 12697-24).

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 12697-27, *Bituminous mixtures — Test methods — Part 27: Sampling*

EN 12697-31, *Bituminous mixtures — Test methods — Part 31: Specimen preparation by gyratory compactor*

EN 12697-33, *Bituminous mixtures — Test methods — Part 33: Specimen prepared by roller compactor*

EN 12697-35, *Bituminous mixtures — Test methods — Part 35: Laboratory mixing*

3 Terms and definitions

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

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

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

3.1

test piece

sample obtained by sawing an asphalt cylinder through a diameter

3.2

strain

relative deformation of the test piece

3.3

stress

force per unit area

3.4

horizontal stress

tensile stress prevailing at the base of the test piece