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MÄÄRAMINE

Bituminous mixtures - Test methods - Part 8:
Determination of void characteristics of bituminous
specimens

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 12697-8:2018 sisaldab Euroopa standardi EN 12697-8:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 12697-8:2018 consists of the English text of the European standard EN 12697-8:2018.
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English Version

**Bituminous mixtures - Test methods - Part 8:
Determination of void characteristics of bituminous
specimens**

Matériaux enrobés - Méthodes d'essai - Partie 8:
Détermination de la teneur en vides caractéristiques
des matériaux bitumineux

Asphalt - Prüfverfahren - Teil 8: Bestimmung von
volumetrischen Charakteristiken von Asphalt-
Probekörpern

This European Standard was approved by CEN on 9 November 2018.

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.

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

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Contents

Page

European foreword.....	3
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	5
4 Determination of the air voids content (V_a)	6
4.1 Principle	6
4.2 Calculation.....	6
4.3 Precision.....	7
4.4 Test report.....	7
5 Determination of the percentage of the voids in the mineral aggregate filled with binder	7
5.1 Principle	7
5.1.1 Mixtures without additives (VFB)	7
5.1.2 Mixtures with additives (VFB_{ad})	7
5.2 Calculation	8
5.2.1 Mixtures without additives.....	8
5.2.2 Mixtures with additives	8
5.3 Precision.....	9
5.4 Test report.....	9

European foreword

This document (EN 12697-8:2018) 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 June 2019 and conflicting national standards shall be withdrawn at the latest by June 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 12697-8:2003.

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;
- [General] For clarity, “v/v” and “m/m” is replaced by “by volume” and “by mass”;
- [General] Change of indices in symbols for void content, binder density and binder content;
- [1] clarification that specimens cut from the pavement or from laboratory compacted slabs can be by either coring or sawing;
- [2] EN 12697-7 added. Also in [4.3];
- [3.3] The term “bituminous material” amended to “bituminous mixture” to be in line with other parts;
- [3.6] New term and definition of VMA_{ad} inserted (void including additives in the mineral aggregate). Following sub-clause renumbered;
- [3.8] New term and definition of VFB_{ad} inserted (voids filled with binder and additives);
- [4.1] clarification added in for mixtures with water in their composition that the bulk density refers to its dry bulk density;
- [4.2] Excessive text: “% by volume” deleted in Formula (1);
- [4.2] Key for V_a : The word “mixture” is replaced with “bituminous specimen” to be in line with definition [3.2] and [4.1] Principle;
- [4.2] and [5.2] Change of units from kg/m^3 into Mg/m^3 ;
- [4.3] Formula (2) including related text deleted for consistency with other parts. Following formulas renumbered accordingly;
- [5.1] Principle for mixtures without additives now described in new sub-clause [5.1.1]. New sub-clause added for mixtures with additives [5.1.2];
- [5.2] Calculation for mixtures without additives now described in new sub-clause [5.2.1]. New sub-clause added for calculation of mixtures with additives [5.2.2];

- [5.2.2] Excessive text: “%” deleted in Formula (4);
- [5.4] dimension of specimen to the nearest 0,1 mm (if measured) added to results.

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 organizations 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 describes a procedure for calculating volumetric characteristics of a compacted bituminous specimen: the air voids content (V_a), the voids content in the mineral aggregate filled with binder (VFB) and the voids content in the mineral aggregate filled with binder and additives (VFB_{ad}) for the case of mixtures containing additives in their composition.

The method is suitable for specimens which are laboratory compacted or specimens cut from the pavement after placement and compacting or from laboratory compacted slabs, either by coring or sawing.

These volumetric characteristics can be used as mix design criteria or as parameters for evaluating the mixture after placing and compacting in the road.

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 12697-5, *Bituminous mixtures — Test methods — Part 5: Determination of the maximum density*

EN 12697-6, *Bituminous mixtures — Test methods for hot mix asphalt — Part 6: Determination of bulk density of bituminous specimens*

EN 12697-7, *Bituminous mixtures — Test methods for hot mix asphalt — Part 7: Determination of bulk density of bituminous specimens by gamma rays*

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:

- Electropedia I.E.C. available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <https://www.iso.org/obp>

3.1

air void

pocket of air between the bitumen-coated aggregate particles (including any existing additives) in a compacted bituminous specimen

3.2

air voids content

V_a

volume of the air voids in a bituminous specimen, expressed as a percentage of the total volume of that specimen

3.3

maximum density

ρ_m

mass per unit volume without air voids of the bituminous mixture