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BSI Standards Publication

Bituminous mixtures — Test methods

Part 6: Determination of bulk density of bituminous specimens

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National foreword

This British Standard is the UK implementation of EN 12697-6:2020. It supersedes BS EN 12697-6:2012, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee B/510/1, Asphalt products.

A list of organizations represented on this committee can be obtained on request to its secretary.

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Bituminous mixtures - Test methods - Part 6: Determination of bulk density of bituminous specimens

Mélanges bitumineux - Méthodes d'essai - Partie 6 :
Détermination de la masse volumique apparente des
éprouvettes bitumineuses

Asphalt - Prüfverfahren - Teil 6: Bestimmung der
Raumdichte von Asphalt-Probekörpern

This European Standard was approved by CEN on 18 November 2019.

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

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European foreword

This document (EN 12697-6:2020) 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of an identical text or by endorsement, at the latest by August 2020, and conflicting national standards shall be withdrawn at the latest by August 2020.

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 12697-6:2012.

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

- the title no longer makes the method exclusively for hot mix asphalt;
- [ge] editorial update according to current standard template;
- [ge] NOTES adjusted according to ISO/IEC Directives – Part 2:2016, 24.5;
- [Clause 2] correction of title for EN 12697-29. Reference to EN 13108-20 deleted;
- [6.1.1] description of accuracy for balance amended to; "With an accuracy of at least 0,1 g for masses up to 5 kg, and 1 g for masses over 5 kg. (Ref. EN 12697-38);
- [6.2.2] description added for accuracy of thermometer to $\pm 0,5$ °C (Ref. EN 12697-38);
- [6.4.1] dated reference of EN 12697-29 deleted;
- [9.3 f)] clarified that also procedure D may be applicable;
- [9.4 a)] amended to include procedure when damp specimen is tested;
- [9.4 c)] added reference to 5.2 Additional materials for the sealed specimen procedure;
- [11.1] editorial: $\sigma_R = (8 - 28)$ amended to read $\sigma_R = (8 \text{ to } 28)$ and $R = (22 - 82)$ amended to read $R = (22 \text{ to } 82)$;
- [A.1] reference to EN 13108-20 deleted;
- [A.2] new NOTE 2 added referring to relevant ASTM methods;
- [A.3 a)] completed with limitation for procedure A, up to void content 7 %;
- [A.3 b)] limitation for procedure A, amended to void content 7 %;
- [A.3 c)] air voids level amended from 15 % to 10 %;
- [A.3 c)] sentence, stating that procedure C is less convenient and rarely used, deleted;
- [A.3 d)] air voids level amended from 15 % to 10 %.

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A list of all parts in the EN 12697 series can be found on the CEN website.

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1 Scope

This document specifies test methods for determining the bulk density of a compacted bituminous specimen. The test methods are intended for use with laboratory compacted specimens or specimens from the pavement after placement and compacting, either by coring or sawing.

This document specifies the following four procedures, the choice of which is used being dependent on the estimated content and accessibility of voids in the specimen:

- a) bulk density — dry (for specimens with a very closed surface);
- b) bulk density — saturated surface dry (SSD) (for specimens with a closed surface);
- c) bulk density — sealed specimen (for specimens with an open or coarse surface);
- d) bulk density by dimensions (for specimens with a regular surface and with geometric shapes, i.e. squares, rectangles, cylinders, etc.).

NOTE Annex A (informative) gives general guidance on selecting the appropriate procedure.

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 12697-29, *Bituminous mixtures — Test methods — Part 29: Determination of the dimensions of a bituminous specimen*

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 <https://www.iso.org/obp/ui>

3.1

bulk density

mass per unit volume, including the air voids, of a specimen at known test temperature

3.2

maximum density

mass per unit volume, without air voids, of a bituminous mixture at known test temperature