



BSI Standards Publication

PUBLISHED DOCUMENT

Guidance on the use of BS EN 13108, Bituminous mixtures – Material specifications

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Foreword

Publishing information

This Published Document is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 31 March 2015. It was prepared by Subcommittee B/510/1, *Asphalt products* and under the authority of Technical Committee B/510, *Road materials*. A list of organizations represented on this committee can be obtained on request to its secretary.

Supersession

PD 6691:2015+A1:2016 supersedes PD 6691:2015, which is withdrawn.

Text introduced or altered by Amendment No. 1 is indicated in the text by tags A1 A1. Minor editorial changes are not tagged.

Relationship with other publications

This Published Document gives non-contradictory, complimentary information for use in the UK with BS EN 13108.

Use of this document

This publication is not to be regarded as a British Standard.

As a guide, this Published Document takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this Published Document is expected to be able to justify any course of action that deviates from its recommendations.

Presentational conventions

The guidance in this Published Document is presented in roman (i.e. upright) type. Any recommendations are expressed in sentences in which the principal auxiliary verb is "should".

The word "may" is used in the text to express permissibility, e.g. as an alternative to the primary recommendation of the Clause. The word "can" is used to express possibility, e.g. a consequence of an action or an event.

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a Published Document cannot confer immunity from legal obligations.

0 Introduction

0.1 Overview of BS EN 13108

BS EN 13108 is based on a common format and common principles. The overall principle is to provide a way for the target composition of a mixture to be declared in a standard way and demonstrate that, at that target composition, it has certain defined properties. Each mixture formulation needs a declaration of the properties which are being claimed, demonstrated through a product-type testing procedure. In the simplest case it can be just grading and binder content. In more complex situations it can include performance-related properties, such as stiffness, deformation resistance and fatigue resistance. The demonstration of performance and conformity of the mixture on an ongoing basis requires the producer to undertake factory production control. This is a quality management procedure involving defined inspection and test regimes, and conformity criteria to prove that the mixture conforms to the declared target composition within defined tolerances.

BS EN 13108 offers a degree of choice in many aspects, such as ways of describing composition, types of constituents, properties, and means of specimen preparation for product-type testing. In many cases, this choice is indicated by the words “should be as specified”. For BS EN 13108 to be practicably workable in the UK there needs to be standardization from amongst these choices so that producers know what to declare through product-type testing and purchasers know what to ask for. This Published Document gives the recommended choices for the mixtures most commonly used in the UK.

BS EN 13108 contains requirements only for the loose mixture, i.e. “in the back of the truck”. The requirements for the laying of asphalts are retained in BS 594987, and conformity to BS 594987 is essential to ensure the durability of the finished work.

For recipe mixtures BS EN 13108 adopts the principle of a declared target composition selected from a permitted range which is different from the fixed composition envelope format of previous British Standards (which specified asphalt mixtures). This UK guidance gives recommendations for an approach to using BS EN 13108 to arrive at mixtures similar to those which have been traditionally used over many years. These are included as example specifications in Annex B, Annex C and Annex D of this Published Document.

BS EN 13108 includes provisions for the use of reclaimed asphalt in asphalt mixtures. BS EN 13108-8 provides a means of defining and classifying the properties of reclaimed asphalt. This Published Document gives guidance on a means of regulating the use of reclaimed asphalt.

0.2 Assessment and verification of constancy of performance

From 1 July 2013 the Construction Products Regulation 2013 [1] was fully implemented across all EU member states. It is a requirement of BS EN 13108 product standards that an asphalt product supplied in conformity with one of the parts of BS EN 13108 is assessed for product type and for conformity utilizing Part 20 and Part 21. This process is called assessment and verification of constancy of performance (AVCP). The end result of the AVCP process is the CE marking of the product confirming that it meets the performance requirements as detailed in the declaration of performance.

BS EN 13108-20 identifies the way in which the performance of a mixture composition to the requirements of the product standards is to be determined.

BS EN 13108-21 specifies procedures to be adopted during production to ensure product constancy and conformity with declared performance.



BS EN 13108-20 calls up test methods from the BS EN 12697 series of asphalt testing standards. Separate guidance on these test methods is given in PD 6692.

0.3 Mathematical nomenclature

To accord with European nomenclature protocols, the nature of mathematical notation adopted in this Published Document is that employed in the European Standard.

When denoting a decimal fraction, European notation employs a comma (,). For example, the “six point three” millimetre sieve (6.3 mm) is denoted as 6,3 mm.

1 Scope

This Published Document gives guidance on the use of BS EN 13108-1:2006, BS EN 13108-2:2008, BS EN 13108-4:2006, BS EN 13108-5:2006, BS EN 13108-7:2006, BS EN 13108-8:2005, BS EN 13108-20:2006 and  BS EN 13108-21:2016 .

Clause 1 to Clause 10 of this Published Document give general guidance and background information on BS EN 13108.

Annex A gives guidance on the importance of BS EN 13108 mixture specifications. Annex B contains an example specification which gives the UK choice for specifying asphalt concrete in accordance with BS EN 13108-1. Annex C contains an example specification which gives the UK choice for specifying hot rolled asphalt in accordance with BS EN 13108-4. Annex D contains an example specification which gives the UK choice for specifying stone mastic asphalt in accordance with BS EN 13108-5.

This Published Document does not give guidance on BS EN 13108-6 as this standard is either rarely used in the UK or covered by other guidance.

This Published Document is applicable to mixtures for use on roads and other paved areas, including airfields. Detailed provisions for airfields are specified elsewhere.

NOTE 1 For airfield installations on the defence estate, guidance is given in the Defence Infrastructure Organisation Practitioner's Guide 06/11 [2].

NOTE 2 There are several asphalt mixtures in general use which have not been covered by British Standards but which are now covered in BS EN 13108. These are stone mastic asphalt, covered by BS EN 13108-5, and asphalt concrete for very thin layers (thin surfacing), covered by BS EN 13108-2.

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.

Standards publications

BS EN 1097-6, *Tests for mechanical and physical properties of aggregates – Determination of particle density and water absorption*

BS EN 1426 (BS 2000-49), *Bitumen and bituminous binders – Determination of needle penetration*

BS EN 12591, *Bitumen and bituminous binders – Specifications for paving grade bitumens*

BS EN 12697-3, *Bituminous mixtures – Test methods for hot mix asphalt – Part 3: Bitumen recovery: Rotary evaporator*