BRITISH STANDARD

BS EN 13108-7:2006

Incorporating corrigenda January 2008 and January 2010

Bituminous mixtures — Material specifications —

Part 7: Porous Asphalt

ICS 93.080.20

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National foreword

This British Standard is the UK implementation of EN 13108-7:2006, incorporating corrigendum January 2008. Together with BS EN 13108-1:2006, it supersedes BS 4987-1:2005 which is withdrawn.

The start and finish of text introduced or altered by corrigendum is indicated in the text by tags. Text altered by CEN corrigendum January 2008 is indicated in the text by ▌AC1⟩ ⟨AC1▐.

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

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

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

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NORME EUROPÉENNE

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EN 13108-7

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Mélanges bitumineux - Spécifications sur le matériau - Partie 7: Bétons bitumineux drainant

Asphaltmischgut - Mischgutanforderungen - Teil 7: Offenporiger Asphalt

This European Standard was approved by CEN on 12 October 2005.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

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Foreword

This European Standard (EN 13108-7:2006) has been prepared by Technical Committee CEN/TC 227 “Road materials”, the secretariat of which is held by DIN.

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 November 2006, and conflicting national standards shall be withdrawn at the latest by January 2008.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this European Standard.

This European Standard is one of a series of standards as listed below:

EN 13108-1, *Bituminous mixtures — Material specifications — Part 1: Asphalt Concrete.*

EN 13108-2, *Bituminous mixtures — Material specifications — Part 2: Asphalt Concrete for very thin layers.*

EN 13108-3, *Bituminous mixtures — Material specifications — Part 3: Soft Asphalt.*

EN 13108-4, *Bituminous mixtures — Material specifications — Part 4: Hot Rolled Asphalt*.

EN 13108-5, *Bituminous mixtures — Material specifications — Part 5: Stone Mastic Asphalt.*

EN 13108-6, *Bituminous mixtures — Material specifications — Part 6: Mastic Asphalt.*

EN 13108-7, *Bituminous mixtures — Material specifications — Part 7: Porous Asphalt.*

EN 13108-8, *Bituminous mixtures — Material specifications — Part 8: Reclaimed asphalt.*

EN 13108-20, *Bituminous mixtures — Material specifications — Part 20: Type Testing.*

EN 13108-21, *Bituminous mixtures — Material specifications — Part 21: Factory Production Control.*

No existing European Standard is superseded.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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Introduction

The ultimate aim is to specify the required fundamental properties of the bituminous mixtures. However, as specifications for Porous Asphalt have traditionally been based empirically on compositional recipes combined with specifications for the constituent materials with additional requirements based on performance related tests and as insufficient experience is available with fundamental testing of Porous Asphalt, this European Standard for the moment specifies empirical requirements only.

Porous Asphalt is used for surface courses. Porous Asphalt can be laid in more than one layer.

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1 Scope

This European Standard specifies requirements for mixtures of the mix group Porous Asphalt for use on roads, airfields and other trafficked areas.

NOTE A mixture specification derived from this European Standard can be used either to declare the conformity of a mixture with known requirements or to make known what those requirements are.

This European Standard includes requirements for the selection of the constituent materials. It is designed to be read in conjunction with EN 13108-20 and EN 13108-21.

Porous Asphalt mixtures with chemical modified binders not covered by EN 14023 are not covered by this European Standard.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 1097-6, *Tests for mechanical and physical properties of aggregates — Part 6: Determination of particle density and water absorption*

EN 1426, *Bitumen and bituminous binders — Determination of needle penetration*

EN 1427, *Bitumen and bituminous binders — Determination of softening point — Ring and ball method*

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

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

EN 12697-4, *Bituminous mixtures — Test methods for hot mix asphalt — Part 4: Bitumen recovery: Fractionating column*

EN 12697-13, *Bituminous mixtures — Test methods for hot mix asphalt — Part 13: Temperature measurement*

EN 13043, *Aggregates for bituminous mixtures and surface treatments for roads, airfields and other trafficked areas*

EN 13108-4:2005, *Bituminous mixtures — Material specifications — Part 4: Hot Rolled Asphalt*

EN 13108-8, *Bituminous mixtures — Material specifications — Part 8: Reclaimed asphalt*

EN 13108-20:2005, *Bituminous mixtures — Material specifications — Part 20: Type Testing*

EN 13108-21:2005, *Bituminous mixtures — Material specifications — Part 21: Factory Production Control*

EN 13501-1, *Fire classification of construction products and building elements — Part 1: Classification using test data from reaction to fire tests*

EN 14023, *Bitumen and bituminous binders — Specifications for polymer modified bitumens*

ISO 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings.*

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3 Terms and definitions, symbols and abbreviations

3.1 Terms and definitions

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

3.1.1
pavement
structure, composed of one or more courses, to assist the passage of traffic over terrain

3.1.2
layer
structural element of a pavement laid in a single operation

3.1.3
course
structural element of a pavement constructed with a single material. A course may be laid in one or more layers

3.1.4
surface course
upper course of a pavement which is in contact with the traffic

3.1.5
binder course
part of a pavement between the surface course and the base

3.1.6
regulating course
course of variable thickness applied to an existing course to provide the necessary profile for a further course of consistent thickness

3.1.7
base
main structural element of a pavement. The base may be laid in one or more courses, described as “upper“ base, “lower“ base etc.

3.1.8
Porous Asphalt
bituminous material with bitumen as a binder prepared so as to have a very high content of interconnected voids which allow passage of water and air in order to provide the compacted mixture with drain and noise reducing characteristics

3.1.9
mix formulation
composition of a single mixture expressed as a target composition

NOTE A target composition may be expressed in two ways (see 3.1.10 and 3.1.11).

3.1.10
input target composition
expression of a mix formulation in terms of the constituent materials, the grading curve and the percentage of bitumen added to the mixture

NOTE This will usually be the result of a laboratory mix design and validation.

3.1.11
output target composition
expression of a mix formulation in terms of the constituent materials and the mid point grading and soluble binder content to be found on analysis

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NOTE This will usually be the result of a production validation.

3.1.12
additive
constituent material, which can be added in small quantities to the mixture, e.g. inorganic or organic fibres or polymers to influence the mechanical properties, the workability or the colour of the mixture

3.2 Symbols and abbreviations

PA Porous Asphalt

D the upper sieve size of aggregate in the mixture, in millimetre (mm)

4 Requirements for constituent materials

4.1 General

Only constituent materials with established suitability shall be used.

The establishment of suitability shall result from one or more of the following:

— European Standard;

— European Technical Approval;

— specifications for materials based on a demonstrable history of satisfactory use in asphalt. Evidence shall be provided on their suitability. This evidence may be based on research combined with evidence from practice.

NOTE In the European asphalt industry it is common practice to use additives like inorganic or organic fibres, pigments, waxes etc., which are not covered by a European Standard or ETA. This European Standard allows the use of those materials.

4.2 Binder

4.2.1 General

The binder shall be a paving grade bitumen or modified bitumen. The paving grade bitumen shall conform to EN 12591 and the modified bitumen to EN 14023.

Natural asphalt conforming to EN 13108-4:2005, Annex B, may be added.

4.2.2 Selection of binder

The grade of the bitumen, the type and grade of modified bitumen and the amount and category of natural asphalt shall be as specified.

[AC1⟩ In case of a paving grade bitumen the grade shall be selected from the grades between 35/50 to 250/330 inclusively. ⟨AC1]

NOTE 1 Given the wide variety of climates, traffic loads, used materials etc. it can be necessary to select on a regional level specific binders.

When modified bitumen is used to improve properties that are not covered by the empirical specification additional proof shall be provided. This proof shall be delivered through investigation using standards in the EN 12697 series, that the modified bitumen is suitable for improving the desired functional characteristics. The proof may be based on earlier research.

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