



# SLOVENSKI STANDARD

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**Bitumenske zmesi - Specifikacije materialov - 2. del: Bitumenski beton za zelo tanke plasti (BBTM)**

Bituminous mixtures - Material specifications - Part 2: Asphalt Concrete for Very Thin Layers (BBTM)

Asphaltmischgut - Mischgutanforderungen - Teil 2: Asphaltbeton für sehr dünne Schichten (BBTM)

Mélanges bitumineux - Specifications des matériaux - Partie 2: Béton bitumineux très minces (BBTM)

**Ta slovenski standard je istoveten z: EN 13108-2:2016**

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**EN 13108-2**

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English Version

**Bituminous mixtures - Material specifications - Part 2:  
Asphalt Concrete for Very Thin Layers (BBTM)**

Mélanges bitumineux - Spécifications pour le matériau  
- Partie 2: Bétons bitumineux très minces (BBTM)

Asphaltmischgut - Mischgutanforderungen - Teil 2:  
Asphaltbeton für sehr dünne Schichten (BBTM)

This European Standard was approved by CEN on 27 February 2016.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

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**EN 13108-2:2016 (E)****European foreword**

This document (EN 13108-2:2016) 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of an identical text or by endorsement, at the latest by December 2016, and conflicting national standards shall be withdrawn at the latest by March 2018.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 13108-2:2006.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of Regulation (EU) No 305/2011 for construction products (CPR).

For relationship with Regulation (EU) No 305/2011 see informative Annex ZA which is an integral part of this European Standard.

Compared with EN 13108-2:2006, the following changes have been made:

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- a) general, empirical and fundamental approaches are not used separately anymore and the properties have been merged into one list with different properties;
  - b) new properties introduced (low temperature properties, friction after polishing);
  - c) additional optional sieves for the characterization of the grading;
  - d) for several properties additional categories are introduced;
  - e) possibility to define specific conditions in documents related to the application of the product;
  - f) CPR reference and new Annex ZA according to CPR rules.

This European Standard is one of a series 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 (BBTM)*
- 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 13108-9, *Bituminous mixtures — Material specifications — Part 9: Asphalt for Ultra-Thin Layer (AUTL)*
- EN 13108-20, *Bituminous mixtures — Material specifications — Part 20: Type Testing*
- EN 13108-21, *Bituminous mixtures — Material specifications — Part 21: Factory Production Control*

Annex A (normative) details the calculation of the penetration or the softening point in mixtures containing reclaimed asphalt from the penetrations or softening points of the added binder and the recovered binder from the reclaimed asphalt.

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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

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## Introduction

The aim of this European Standard is to enable specification of Asphalt Concrete for Very Thin Layers mixtures on a performance basis. In general, however, there are currently more empirical tests available to describe the mixtures. Depending on the experience with the combination of requirements in this European Standard more or less degrees of freedom for the producer may be given.

This European Standard covers a large variety of materials for different applications, traffic and climate conditions. EN 13108-2 gives properties and listings of possible categories. It has to accommodate the road industry for all of Europe. For this reason the menu approach for properties has been chosen. The tables represent categories that are required all over Europe. For this reason numerical values in tables do not always obey statistical rules. Based on conditions of use specific properties and categories may be defined in documents related to the application of the product. The categories defined in those documents need to take into account the reproducibility of the test when this is given in the appropriate test method.

Care should be taken to only select those tests which are relevant to the application of the asphalt and the use of the pavement and to avoid a combination of potentially conflicting requirements.

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## 1 Scope

This European Standard specifies requirements for mixtures of the mix group Asphalt Concrete for Very Thin Layers for use on roads, airfields and other trafficked areas. Asphalt Concrete for Very Thin Layers is a bituminous material, of which the composition and the grading of the aggregate is selected for application of the material in very thin layers with a thickness of 20 mm to 30 mm. Mixtures utilizing bitumen emulsion and bituminous materials based on *in situ* recycling are not covered by this standard.

Asphalt Concrete for Very Thin Layers is used for surface courses.

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.

## 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.

EN 1097-6:2013, *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 the 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 — Part 4: Bitumen recovery: Fractionating column*

EN 12697-8, *Bituminous mixtures — Test methods for hot mix asphalt — Part 8: Determination of void characteristics of bituminous specimens*

EN 12697-12, *Bituminous mixtures — Test methods for hot mix asphalt — Part 12: Determination of the water sensitivity of bituminous specimens*

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

EN 12697-16, *Bituminous mixtures — Test methods for hot mix asphalt — Part 16: Abrasion by studded tyres*

EN 12697-22, *Bituminous mixtures — Test methods for hot mix asphalt — Part 22: Wheel tracking*

EN 12697-30, *Bituminous mixtures — Test methods for hot mix asphalt — Part 30: Specimen preparation by impact compactor*

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

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EN 12697-32, *Bituminous mixtures — Test methods for hot mix asphalt — Part 32: Laboratory compaction of bituminous mixtures by vibratory compactor*

EN 12697-41, *Bituminous mixtures — Test methods for hot mix asphalt — Part 41: Resistance to de-icing fluids*

EN 12697-43, *Bituminous mixtures — Test methods for hot mix asphalt — Part 43: Resistance to fuel*

EN 12697-46, *Bituminous mixtures — Test methods for hot mix asphalt — Part 46: Low temperature cracking and properties by uniaxial tension tests*

EN 12697-49, *Bituminous mixtures — Test methods for hot mix asphalt — Part 49: Determination of friction after polishing*

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

EN 13108-4:2016, *Bituminous mixtures — Material specifications — Part 4: Hot Rolled Asphalt*

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

EN 13108-20:2016, *Bituminous mixtures — Material specifications — Part 20: Type Testing*

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

EN 13501-1:2007+A1:2009, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

EN 13924-2, *Bitumen and bituminous binders — Specification framework for special paving grade bitumen — Part 2: Multigrade paving grade bitumens*

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

EN ISO 11925-2, *Reaction to fire tests — Ignitability of products subjected to direct impingement of flame — Part 2: Single-flame source test (ISO 11925-2)*

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

### **3 Terms, definitions, symbols and abbreviations**

#### **3.1 Terms and definitions**

For the purposes of this document, 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**

element of a pavement laid in a single operation

### 3.1.3 course

structural element of a pavement constructed with a single material

Note 1 to entry: A course can be laid in one or more layers.

### 3.1.4 surface course

upper course of the pavement, which is in contact with the traffic

### 3.1.5 binder course

structural course of the pavement between the surface course and the base

### 3.1.6 regulating course

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

### 3.1.7 base

main structural element of a pavement

Note 1 to entry: The base can be laid in one or more courses, described as “upper” base, “lower” base.

### 3.1.8 asphalt

homogenous mixture typically of coarse and fine aggregates, filler aggregate and bituminous binder which is used in the construction of a pavement

Note 1 to entry: Asphalt can include one or more additives to enhance the laying characteristics, performance or appearance of the mixture.

### 3.1.9 natural asphalt

naturally occurring mixture of bitumen and finely divided mineral matter which is found in well-defined surface deposits and which is processed to remove unwanted components such as water and vegetable matter

Note 1 to entry: Natural asphalt is described in EN 13108-4.

### 3.1.10 Asphalt Concrete for Very Thin Layers

asphalt for surface courses with a thickness of 20 mm to 30 mm, in which the aggregate particles are generally gap-graded to form a stone to stone contact and to provide an open surface texture

### 3.1.11 mix formulation

composition of a single mixture expressed as a target composition

Note 1 to entry: A target composition is expressed in one of two ways (see 3.1.12 and 3.1.13).

**EN 13108-2:2016 (E)****3.1.12****input target composition**

expression of the mix formulation in terms of the constituent materials, the grading curve and the percentage of bitumen added to the mixture

Note 1 to entry: This will usually be the result of a laboratory mix design and validation.

**3.1.13****output target composition**

expression of the mix formulation in terms of the constituent materials and the mid-point grading and soluble binder content to be found on analysis

Note 1 to entry: This will usually be the result of a production validation.

**3.1.14****additive**

constituent material, which can be added in small to influence specific properties of the mixture

**3.1.15****conflicting requirements**

combination of requirements or properties which are impracticable to fulfil in their entirety

Note 1 to entry: This can occur by combining specific requirements for the composition and constituent materials together with more performance related tests. These are also relevant when two or more performance or test parameters are selected which measure similar properties using conflicting test methods resulting in a lack of clarity and consistency in the characteristics of the mixture.

**3.1.16****premixed binder**

bitumen which is blended on the site of the asphalt mixing plant, with an additive before or during the addition of the binder to the plant mixer, which in the case of a continuous plant, will be before or during the delivery of the binder to the mixing zone of the drier drum

**3.1.17****category**

defined level of a property of an asphalt mixture

Note 1 to entry: The designation of a category is expressed with a symbol and a numerical value representing the level.

EXAMPLE  $B_{\min} 4,0$  means that the minimum binder content shall be 4,0 %.

Note 2 to entry: Defined categories for each property are listed in EN 13108-2.

**3.1.18****class**

range of levels defined by a minimum and a maximum value

**3.2 Symbols and abbreviations**

BBTM general designation for Asphalt Concrete for Very Thin Layers

BBTMD general designation for Asphalt Concrete for Very Thin Layers followed by an indication of  $D$ , the upper sieve size of the aggregate in the mixture, in millimetres (mm)