



SLOVENSKI STANDARD
SIST EN 13108-8:2006
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Bitumenske zmesi – Specifikacije materialov – 8. del: Ponovno uporabljen asfalt

Bituminous mixtures - Material specifications - Part 8: Reclaimed asphalt

Asphaltnischgut - Mischgutanforderungen - Teil 8: Ausbauasphalt

Mélanges bitumineux - Spécifications de matériaux - Partie 8 : Agrégats d'enrobés

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English Version

Bituminous mixtures - Material specifications - Part 8: Reclaimed asphalt

Mélanges bitumineux - Spécifications de matériaux - Partie
8 : Agrégats d'enrobés

Asphaltmischgut - Mischgutanforderungen - Teil 8:
Ausbauasphalt

This European Standard was approved by CEN on 29 August 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.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Page

Foreword	3
Introduction	4
1 Scope	5
2 Normative references	5
3 Terms, definitions, symbols and abbreviations	5
3.1 Terms and definitions	5
3.2 Symbols and abbreviations.....	6
4 Requirements for the feedstock	6
4.1 Foreign matter	6
4.2 Binder	7
4.2.1 Type of binder	7
4.2.2 Binder properties	7
4.3 Aggregate grading and <i>D</i>	8
4.4 Binder content.....	8
4.5 Particle size reclaimed asphalt	8
5 Description of the feedstock	8
5.1 Source of reclaimed asphalt	8
5.2 Type and properties of aggregate	8
5.3 Homogeneity	9
5.4 Sampling and Testing	9
5.4.1 Feedstock	9
5.4.2 Sampling and number of samples, <i>n</i>	9
5.4.3 Testing	9
5.4.4 Reclaimed asphalt for low percentage additions	9
5.5 Stock control	9
6 Identification.....	9

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Foreword

This European Standard (EN 13108-8:2005) 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 April 2006, and conflicting national standards shall be withdrawn at the latest by January 2008.

This European Standard does not replace any existing European Standard.

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

prEN 13108-1, *Bituminous mixtures — Material specifications — Part 1: Asphalt concrete.*

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

prEN 13108-3, *Bituminous mixtures — Material specification — Part 3: Soft asphalt.*

prEN 13108-4, *Bituminous mixtures — Material specification — Part 4: Hot rolled asphalt.*

prEN 13108-5, *Bituminous mixtures — Material specifications — Part 5: Stone mastic asphalt.*

prEN 13108-6, *Bituminous mixtures — Material specifications — Part 6: Mastic asphalt.*

prEN 13108-7, *Bituminous mixtures — Material specifications — Part 7: Porous asphalt (PA).*

prEN 13108-10, *Bituminous mixtures — Quality — Part 10: Factory production control.*

prEN 13108-20, *Bituminous mixtures — Material specifications — Part 20: Type testing.*

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

Introduction

The increasing use of recycling in asphalt production makes it necessary to specify reclaimed asphalt sold as a constituent material in a way similar to that of aggregates and binders. In the asphalt product standards prEN 13108-1 up to and including prEN 13108-7 the use of reclaimed asphalt is permitted with requirements related to the percentage addition.

Reclaimed asphalt comprises asphalt, reclaimed by milling of asphalt road layers, by crushing of slabs ripped up from asphalt pavements, lumps from slabs, and asphalt from reject and surplus production.

Reclaimed asphalt (RA) may be used as a constituent material for bituminous mixtures manufactured in a hot mix asphalt plant, in accordance with the specifications for those mixtures.

This European Standard contains requirements for reclaimed asphalt with respect to binder and aggregate properties and foreign matter that apply in all cases of usage of reclaimed asphalt. Additionally, this European Standard indicates which properties of the reclaimed asphalt and its constituent materials shall be declared and documented if a description of a feedstock is required.

The particle size of the aggregate, the properties of the binder, and foreign matter in the reclaimed asphalt are relevant to the quality of the product, i.e. the fresh asphalt in which it is mixed. The size of the particles of asphalt in the reclaimed asphalt, which may range from large lumps to finely milled material, is relevant only to the process to be used to mix into the fresh asphalt.

Since the requirements for the asphalt mixtures are the same for mixtures with and without reclaimed asphalt, the level of homogeneity of the material in practice determines the maximum amount of reclaimed asphalt that may be used.

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1 Scope

This European Standard specifies requirements for the classification and description of reclaimed asphalt as a constituent material for asphalt mixtures.

This European Standard only specifies reclaimed asphalt with bituminous binders: paving grade bitumen, modified bitumen or hard grade bitumen.

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 932-1, *Test for general properties of aggregates – Part 1: Methods for sampling*

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 12596, *Bitumen and bituminous binders - Determination of dynamic viscosity by vacuum capillary*

EN 12697-1, *Bituminous mixtures – Test methods for hot mix asphalt – Part 1: Soluble binder content*

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*

prEN 12697-42, *Bituminous mixtures – Test methods for hot mix asphalt – Part 42: Amount of foreign matters in reclaimed asphalt.*

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

3 Terms, definitions, symbols and abbreviations

3.1 Terms and definitions

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

3.1.1

asphalt

mixture of aggregates and bituminous binder

3.1.2

reclaimed asphalt

asphalt reclaimed by milling of asphalt road layers, by crushing of slabs ripped up from asphalt pavements or lumps from asphalt slabs and asphalt from reject and surplus production

3.1.3

feedstock of reclaimed asphalt

defined quantity of material to be used as a constituent material for the manufacturing of hot asphalt mixtures

3.1.4

aggregate size

designation of the size of the aggregate in the reclaimed asphalt in terms of lower (d) and upper (D) sieve sizes, expressed as d/D. For reclaimed asphalt, d will almost invariably be 0

3.1.5

particle size of reclaimed asphalt

maximum size of the pieces of asphalt in the reclaimed material, expressed as a sieve size (U)

3.2 Symbols and abbreviations

3.2.1

D: upper sieve size of the aggregate in the reclaimed asphalt, in millimetres

D is the larger of:

sieve M/1,4, where M is the smallest sieve with 100 % passing;

and

smallest sieve with 85 % passing

3.2.2

U particle size of reclaimed asphalt

Smallest sieve size in mm through which 100 % of the asphalt particles pass

3.2.3

U RA d/D size designation of the reclaimed asphalt

Reclaimed asphalt shall be designated by the abbreviation RA, preceded by the asphalt particle size designation U and followed by the aggregate size designation d/Dmm

EXAMPLE 40 RA 0/8 mm: Reclaimed asphalt, of which the aggregate has an upper sieve size of 8 mm and the asphalt particles have a maximum size of 40 mm.

4 Requirements for the feedstock

4.1 Foreign matter

The presence, content and type of any foreign matter, as defined below, shall be documented and the category declared.

The content of foreign matter shall be determined according to prEN 12697-42.

Foreign matter comprises materials other than natural aggregate, not derived from asphalt and are divided in two groups:

Group 1 materials such as:

- cement concrete, including cement concrete products;
- bricks;

- sub base material (excluding natural aggregate);
- cement mortar;
- metal;

and Group 2 materials such as:

- synthetic materials;
- wood;
- plastics.

The reclaimed asphalt shall be classified in terms of foreign matter content as described below:

Category F1- content of group 1 material not greater than 1 %, content of group 2 material not greater than 0,1 %;

Category F5- content of group 1 material not greater than 5 %, content of group 2 material not greater than 0,1 %;

Category Fdec- content and nature of all foreign matter declared.

4.2 Binder

4.2.1 Type of binder

The type of binder shall be documented and declared. This declaration shall indicate whether the binder is mainly a paving grade bitumen, a modified bitumen, or a hard grade bitumen or if the reclaimed asphalt in the feedstock contains a modifier additive.

SIST EN 13108-8:2006

The declaration shall be based on either contemporary or earlier investigations and information.

4.2.2 Binder properties

When required (see Note), either the mean penetration, the mean softening point or the viscosity of the binder of the samples according to 5.4.2 shall be documented and declared as either fixed categories or declared values as described below.

NOTE The recovery of bitumen involves the use of potentially harmful solvents and should be limited to the minimum essential frequency.

When the feedstock contains mainly reclaimed asphalt with paving grade bitumen the binder properties shall be declared in one of the following ways:

- reclaimed asphalt shall be categorised as P₁₅ if the penetration of the binder of each of the samples according to 5.4.2 is at least 10d mm and the mean penetration of all of the samples is at least 15d mm, or
- reclaimed asphalt shall be categorised as S₇₀ if softening point of the binder of each of the samples according to 5.4.2 is no greater than 77 °C and the mean softening point of all of the samples is no greater than 70 °C.
- for other reclaimed asphalt, either the mean penetration values or the mean softening points shall be declared as category Pdec or Sdec.
- for reclaimed asphalt to be used in soft asphalt, the mean viscosity at 60 °C shall be declared as Vdec.