

# SLOVENSKI STANDARD

## SIST EN 12970:2003

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**Liti asfalt in asfaltni mastiks za hidroizolacijo - Definicije, zahteve in preskusne metode**

Mastic asphalt for waterproofing - Definitions, requirements and test methods

Gußasphalt und Asphaltmastix für Abdichtungen - Definitionen, Anforderungen und Prüfverfahren

Asphalte coulé pour étanchéité - Définitions, spécifications et méthodes d'essai

**Ta slovenski standard je istoveten z: EN 12970:2000**

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### ICS:

91.100.50	Veziva. Tesnilni materiali	Binders. Sealing materials
93.080.20	Materiali za gradnjo cest	Road construction materials

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
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Mastic asphalt for waterproofing - Definitions, requirements and  
test methods

Asphalte coulé pour étanchéité - Définitions, spécifications  
et méthodes d'essai

Gußasphalt und Asphaltmastix für Abdichtungen -  
Definitionen, Anforderungen und Prüfverfahren

This European Standard was approved by CEN on 5 July 2000.

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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EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 314 "Mastic asphalt for waterproofing", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by March 2001, and conflicting national standards shall be withdrawn at the latest by March 2001.

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

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## 1 Scope

This European standard specifies mastic asphalts for waterproofing, states their characteristics, the test methods to be used to verify these characteristics, and their manufacturing and transport recommendations.

It applies to mastic asphalts used for waterproofing or by application on polymer bitumen sheets in the construction and civil engineering fields, such as roofing, parking, tanking, bridge decks (concrete and steel). It does not include functional requirements to the installed products.

## 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 1871, *Road marking materials - Physical properties.*

EN 12591, *Bitumen and bituminous binders- Specifications for paving grade bitumen.*

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

prEN 13305, *Bitumen and bituminous binders - Specifications of hard grade bitumen.*

prEN 13043, *Aggregates for bituminous mixtures and surface dressings for roads airfields and other trafficked areas.*

prEN 13108-6, *Bituminous mixtures – Material specifications – Part 6: Mastic Asphalt.*

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

prEN 12697-20, *Bituminous mixtures - Part 20 : Test methods for hot mix asphalt - Resistance to indentation of mastic asphalt, indentation test on cubes.*

prEN 12697-21, *Bituminous mixtures - Part 21 : Test methods for hot mix asphalt – Resistance to indentation of mastic asphalt, indentation test on plates.*

## 3 Definitions and description of the materials

### 3.1 Terminology - Vocabulary

For the purposes of this standard, the following definitions apply :

#### 3.1.1

##### **mastic asphalt (general definition)**

dense mass consisting of chippings, and/or sand, and/or limestone fine aggregate, and/or filler and bitumen which may contain additives

The mineral aggregate is composed to be of low void content. The binder content is so adjusted to the void content of the mineral aggregate that the voids are completely filled and a slight excess of binder may be available.

Mastic asphalt is pourable and able to be spread in his hot condition. It requires no compaction on placement.

#### 3.1.2

##### **fine aggregate mastic asphalt**

grade of mastic asphalt consisting of filler and/or limestone fine aggregate and/or natural rock asphalt powder and/or sand and bitumen. Bitumen and mastic asphalt may contain additives

**3.1.3****coarse aggregate mastic asphalt**

grade of mastic asphalt consisting of filler and/or sand and/or limestone fine aggregates and/or natural rock asphalt powder and coarse aggregates, and bitumen. Bitumen and mastic asphalt may contain additives

**3.2 Classification of mastic asphalts for waterproofing**

## — Fine aggregate mastic asphalts

Mainly used for waterproofing layers.

Containing fine aggregate in any of the following combinations :

- natural rock asphalt powder ;
- fillers ;
- limestone fine aggregate ;
- sand.

NOTE 1 Roofing grade, fine aggregate mastic asphalt may also contain a proportion of aggregate up to 4 mm size (see Table 3a, types 3 and 5).

NOTE 2 Limestone fine aggregate may not comply fully with the definition in subclause 3.13 of pr EN 13043 in that the proportion passing a 0,063 mm sieve may marginally exceed 50 %.

## — Coarse aggregate mastic asphalts

Mainly used for waterproofing layers or protection layers and/or trafficable protection layers.

Containing coarse aggregate and fine aggregate in any of the following combinations :

- natural rock asphalt powder ;
- limestone fine aggregate ;
- filler ;
- sand ;
- coarse aggregate.

**4 Characteristics of the components**

For special layers needing acid-resisting mastic asphalts, silicious and/or igneous aggregates must be used.

**4.1 Natural rock asphalts and natural asphalts****4.1.1 Natural rock asphalt**

Generally limestone, naturally impregnated with bitumen.

Table 1 — Requirements on natural rock asphalts

Components	Required content (weight)
Soluble native bitumen	≥ 6 %
CaCO <sub>3</sub> from the mineral fraction	≥ 80 %

#### 4.1.2 Natural rock asphalt powder

After bitumen has been extracted, the constituents of the residual crushed powder shall pass through square mesh sieves of :

- 2,00 mm : 100 % ;
- 0,063 mm : 80 % minimum.

#### 4.1.3 Natural asphalts

Natural occurring bitumens, containing fines.

Table 2 — Requirements on natural asphalts

Components	Required soluble bitumen content (weight)
Soluble bitumen	≥ 50 %
Mineral aggregate	≤ 50 %

NOTE Examples of such natural occurring materials are " Lake Asphalt " Gilsonite and Selenitza. The most-widely used natural asphalt is " Trinidad Lake Asphalt " (commonly abbreviated to " TLA ").

### 4.2 Bituminous binders

The penetrability of commonly used bitumen for mastic asphalts shall be comprised between 6 and 220, 1/10 mm.

#### 4.2.1 Paving grade bitumen

Conforming to EN 12591.

#### 4.2.2 Modified bitumen

Conforming to EN 1426.

#### 4.2.3 Hard grade bitumen

Conforming to prEN 13305.

### 4.3 Aggregates

#### 4.3.1 Added fillers

Added fillers, components of mastic asphalt, may be issued from :

- crushed natural rock material such as limestone rock, silica rock, igneous rock ;
- rock asphalt powder ;



- dust-extractor recovering.

Whatever their origin, fillers shall comply with the requirements of Table 10 of prEN 13043.

#### 4.3.2 Limestone fine aggregates

Limestone fine aggregate shall consist of naturally occurring limestone with a calcium carbonate content of not less than 80 % by mass.

In limestone fine aggregates, a substantial proportion is retained on a 0,063 mm sieve most of which passes a 2 mm sieve. Limestone fine aggregate may not comply fully with the definition of prEN 13043 in that the proportion passing a 0,063 mm sieve may marginally exceed 50 %.

#### 4.3.3 Fine aggregates (sand)

Fine aggregates shall comply as appropriate with prEN 13043.

#### 4.3.4 Coarse aggregates

Coarse aggregates shall comply as appropriate with prEN 13043.

### 4.4 Reusable mastic asphalt

Reusable mastic asphalt may only be added to the manufacture of new mastic asphalt for protection layers.

When used, the amount and composition of reusable material shall :

- not contain other materials than mentioned in this standard ;
- be suitable for the type/specification required within permissible tolerances for new mastic asphalt.

### 4.5 Additives

The application and usage of mastic asphalts and the laying conditions sometimes require the use of additives such as :

- rubber ;
- polymers (granular/powder/liquid) ;
- fibres ;
- pigments ;
- waxes ;
- other suitable additives.