

## **Bituminous mixtures - Test methods for hot mix asphalt - Part 10: Compactability**

Bituminous mixtures - Test methods for hot mix  
asphalt - Part 10: Compactability

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12697-10:2002 sisaldab Euroopa standardi EN 12697-10:2001 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 16.05.2002 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12697-10:2002 consists of the English text of the European standard EN 12697-10:2001.</p> <p>This document is endorsed on 16.05.2002 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
--	---

<p><b>Käsitlusala:</b></p> <p>This European Standard describes three test methods for characterising the compactability of a bituminous mix, by the relation between its density or void content and the compaction energy applied to it, using an impact (Marshall) compactor, gyratory compactor, or a vibratory compactor.</p>	<p><b>Scope:</b></p> <p>This European Standard describes three test methods for characterising the compactability of a bituminous mix, by the relation between its density or void content and the compaction energy applied to it, using an impact (Marshall) compactor, gyratory compactor, or a vibratory compactor.</p>
---	---

**ICS** 93.080.20

**Võtmesõnad:** compressibility, construction, construction materials, definition, definitions, density, density (mass/volume), determination, hot mix asphalts, mathematical calculations, mechanical properties, performance tests, physical properties, road construction, testing

ICS 93.080.20

**English version**

Bituminous mixtures  
**Test methods for hot mix asphalt**  
Part 10: Compactability

Mélange bitumineux – Méthodes d'essai pour mélange hydrocarboné à chaud – Partie 10: Compactabilité

Asphalt – Prüfverfahren für Heißasphalt – Teil 10: Verdichtbarkeit

This European Standard was approved by CEN on 2001-10-14.

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 Management Centre or to any CEN member.

The European Standards exist 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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

**Management Centre: rue de Stassart 36, B-1050 Brussels**

## Contents

	page
Foreword.....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions.....	5
4 Principle .....	6
5 Apparatus .....	7
6 Test procedure .....	7
7 Calculation and expression of results.....	8
8 Test report .....	10
9 Precision .....	10

## Foreword

This European Standard 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 May 2002, and conflicting national standards shall be withdrawn at the latest by August 2005.

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

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

prEN 12697-2, *Bituminous mixtures - Test methods for hot mix asphalt - Part 2: Particle size distribution.*

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 12697-5, *Bituminous mixtures - Test methods for hot mix asphalt - Part 5: Determination of the maximum density.*

prEN 12697-6, *Bituminous mixtures - Test methods for hot mix asphalt - Part 6: Determination of bulk density of bituminous specimen by hydro-static method.*

prEN 12697-7, *Bituminous mixtures - Test methods for hot mix asphalt - Part 7: Determination of bulk density of bituminous specimens by gamma rays.*

prEN 12697-8, *Bituminous mixtures - Test methods for hot mix asphalt - Part 8: Determination of the air voids content of bituminous materials.*

prEN 12697-9, *Bituminous mixtures - Test methods for hot mix asphalt - Part 9: Determination of the reference density, gyrator compactor.*

EN 12697-10, *Bituminous mixtures - Test methods for hot mix asphalt - Part 10: Compactability.*

prEN 12697-11, *Bituminous mixtures - Test methods for hot mix asphalt - Part 11: Determination of the compatibility between aggregate and bitumen.*

prEN 12697-12, *Bituminous mixtures - Test methods for hot mix asphalt - Part 12: Determination of the water sensitivity of bituminous specimen.*

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

EN 12697-14, *Bituminous mixtures - Test methods for hot mix asphalt - Part 14: Water content.*

prEN 12697-15, *Bituminous mixtures - Test methods for hot mix asphalt - Part 15: Determination of the segregation sensitivity of bituminous mixtures.*

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

prEN 12697-17, *Bituminous mixtures - Test methods for hot mix asphalt - Part 17: Partial loss of porous asphalt specimen.*

prEN 12697-18, *Bituminous mixtures - Test methods for hot mix asphalt - Part 18: Binder drainage from porous asphalt.*

prEN 12697-19, *Bituminous mixtures - Test methods for hot mix asphalt - Part 19: Permeability of specimen.*

prEN 12697-20, *Bituminous mixtures - Test methods for hot mix asphalt - Part 20: Indentation using cube or marshall specimen.*

prEN 12697-21, *Bituminous mixtures - Test methods for hot mix asphalt - Part 21: Indentation using plate specimens.*

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

prEN 12697-23, *Bituminous mixtures - Test methods for hot mix asphalt - Part 23: Determination of the indirect tensile strength of bituminous specimens.*

prEN 12697-24, *Bituminous mixtures - Test methods for hot mix asphalt - Part 24: Resistance to fatigue.*

prEN 12697-25, *Bituminous mixtures - Test methods for hot mix asphalt - Part 25: Dynamic creep test.*

prEN 12697-26, *Bituminous mixtures - Test methods for hot mix asphalt - Part 26: Stiffness.*

EN 12697-27, *Bituminous mixtures - Test methods for hot mix asphalt - Part 27: Sampling.*

EN 12697-28, *Bituminous mixtures - Test methods for hot mix asphalt - Part 28: Preparation of samples for determining binder content, water content and grading.*

prEN 12697-29, *Bituminous mixtures - Test methods for hot mix asphalt - Part 29: Determination of the dimensions of bituminous specimen.*

prEN 12697-30, *Bituminous mixtures - Test methods for hot mix asphalt - Part 30: Specimen preparation, impact compactor.*

prEN 12697-31, *Bituminous mixtures - Test methods for hot mix asphalt - Part 31: Specimen preparation, gyratory compactor.*

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

prEN 12697-33, *Bituminous mixtures - Test methods for hot mix asphalt - Part 33: Specimen preparation, slab compactor.*

prEN 12697-34, *Bituminous mixtures - Test methods for hot mix asphalt - Part 34: Marshall test.*

prEN 12697-35, *Bituminous mixtures - Test methods for hot mix asphalt - Part 35: Laboratory mixing.*

prEN 12697-36, *Bituminous mixtures - Test methods for hot mix asphalt - Part 36: Method for the determination of the thickness of a bituminous pavement.*

prEN 12697-37, *Bituminous mixtures - Test methods for hot mix asphalt - Part 37: Hot sand test for the adhesivity of binder on precoated chippings for HRA.*

The applicability of this European Standard is described in the product standards for bituminous materials.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

## 1 Scope

This European Standard describes three test methods for characterising the compactability of a bituminous mix, by the relation between its density or void content and the compaction energy applied to it, using an impact (Marshall) compactor, gyratory compactor, or a vibratory compactor.

This European Standard applies to hot bituminous mixtures (both those prepared in laboratory and those resulting sampled from plant produced mixtures), with  $D$  not larger than 31,5 mm in accordance with prEN 13043 for the impact and gyratory compactors, and 40 mm for the vibratory compactor. The results of the test method serve to supplement the results of mixture design.

## 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 (including amendments).

prEN 12697-5, *Bituminous mixtures – Test methods for hot mix asphalt – Part 5: Determination of the maximum density.*

prEN 12697-6, *Bituminous mixtures – Test methods for hot mix asphalt – Part 6: Determination of bulk density of bituminous specimen by hydro-static method.*

prEN 12697-8, *Bituminous mixtures – Test methods for hot mix asphalt – Part 8: Determination of the air voids content of bituminous materials.*

prEN 12697-30, *Bituminous mixtures – Test methods for hot mix asphalt – Part 30: Specimen preparation, impact compactor.*

prEN 12697-31:2000, *Bituminous mixtures – Test methods for hot mix asphalt – Part 31: Specimen preparation, gyratory compactor.*

prEN 12697-32, *Bituminous mixtures – Test methods for hot mix asphalt – Part 32: Laboratory compaction of bituminous mixtures by a vibratory compactor.*

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

ISO 5725, *Accuracy (trueness and precision) of measurement methods and results.*

## 3 Terms and definitions

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

### 3.1

#### **soluble binder**

percentage by mass of extractable binder in an anhydrous sample determined by extracting the binder from the sample

NOTE Extraction may be followed by binder recovery.

### 3.2

#### **insoluble binder content**

percentage by mass of binder that adheres to the aggregate particles after extraction

### 3.3

#### **precision**

closeness of agreement between independent test results obtained under stipulated conditions