Täitematerjalide mehaaniliste ja füüsikaliste omaduste katsetamine. Osa 1: Kulumiskindluse määramine (mikro-Deval)

Tests for mechanical and physical properties of aggregates - Main element - Part 1: Determination of the resistance to wear (micro-Deval)

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1097-1:2011 sisaldab Euroopa standardi EN 1097-1:2011 ingliskeelset teksti.	This Estonian standard EVS-EN 1097-1:2011 consists of the English text of the European standard EN 1097-1:2011.
Standard on kinnitatud Eesti Standardikeskuse 28.02.2011 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.	This standard is ratified with the order of Estonian Centre for Standardisation dated 28.02.2011 and is endorsed with the notification published in the official bulletin of the Estonian national standardisation organisation.
Euroopa standardimisorganisatsioonide poolt rahvuslikele liikmetele Euroopa standardi teksti kättesaadavaks tegemise kuupäev on 19.01.2011.	Date of Availability of the European standard text 19.01.2011.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

ICS 91.100.15

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 1097-1

January 2011

ICS 91.100.15

Supersedes EN 1097-1:1996

English Version

Tests for mechanical and physical properties of aggregates - Part 1: Determination of the resistance to wear (micro-Deval)

Essais pour déterminer les caractéristiques mécaniques et physiques des granulats - Partie 1: Détermination de la résistance à l'usure (micro-Deval)

Prüfverfahren für mechanische und physikalische Eigenschaften von Gesteinskörnungen - Teil 1: Bestimmung des Widerstandes gegen Verschleiß (Micro-Deval)

This European Standard was approved by CEN on 11 December 2010.

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.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, 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.

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

Management Centre: Avenue Marnix 17, B-1000 Brussels

Ref. No. EN 1097-1:2011: E

Contents

Page

Foreword

This document (EN 1097-1:2011) has been prepared by Technical Committee CEN/TC 154 “Aggregates”, the secretariat of which is held by BSI.

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 July 2011, and conflicting national standards shall be withdrawn at the latest by July 2011.

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 replaces EN 1097-1:1996.

This standard forms part of a series of tests for mechanical and physical properties of aggregates. Test methods for other properties of aggregates will be covered by the following European Standards:

- EN 932 (all parts), *Tests for general properties of aggregates*;
- EN 933 (all parts), *Tests for geometrical properties of aggregates*;
- EN 1367 (all parts), *Tests for thermal and weathering properties of aggregates*;
- EN 1744 (all parts), *Tests for chemical properties of aggregates*;
- EN 13179 (all parts), *Tests for filler aggregate used in bituminous mixtures*.

The other Parts of EN 1097 will be:

- *Part 2: Methods for the determination of resistance to fragmentation*;
- *Part 3: Determination of loose bulk density and voids*;
- *Part 4: Determination of the voids of dry compacted filler*;
- *Part 5: Determination of the water content by drying in a ventilated oven*;
- *Part 6: Determination of particle density and water absorption*;
- *Part 7: Determination of the particle density of filler — Pyknometer method*;
- *Part 8: Determination of the polished stone value*;
- *Part 9: Determination of the resistance to wear by abrasion from studded tyres — Nordic test*;
- *Part 10: Determination of water suction height*.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard describes the reference method used for type testing and in case of dispute for determining the resistance to wear of coarse aggregates (main text) and aggregates for railway ballast (Annex A). For other purposes, in particular factory production control, other methods may be used provided that an appropriate working relationship with the reference method has been established. The sample is normally tested in a wet condition, but the test may also be carried out in a dry condition. This European Standard applies to natural, manufactured or recycled aggregates used in building or civil engineering.

2 Normative references

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

EN 932-2, *Tests for general properties of aggregates — Part 2: Methods for reducing laboratory samples*

EN 932-5, *Tests for general properties of aggregates — Part 5: Common equipment and calibration*

EN 933-1:1997, *Tests for geometrical properties of aggregates — Part 1: Determination of particle size distribution — Sieving method*

EN ISO 4788, *Laboratory glassware — Graduated measuring cylinders (ISO 4788:2005)*

ISO 3290-1, *Rolling bearings — Balls — Part 1: Steel balls*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply:

3.1
test portion
sample used as a whole in a single test

3.2
test specimen
sample used in a single determination when a test method requires more than one determination of a property

3.3
laboratory sample
reduced sample derived from a bulk sample for laboratory testing

3.4
constant mass
mass determined by successive weightings performed at least 1 h apart and not differing by more than 0,1%

NOTE In many cases, constant mass can be achieved after a test portion has been dried for a pre-determined period in a specified oven at (110 ± 5) °C. Test laboratories can determine the time required to achieve constant mass for specific types and sizes of sample dependent upon the drying capacity of the oven used.

4 Principle

The test determines the micro-Deval coefficient which is the percentage of the original sample reduced to a size smaller than 1,6 mm during rolling.