TÄITEMATERJALIDE TOIMIVUSE PÜSIVUSE HINDAMINE JA KONTROLLIMINE. TÜÜBIKATSED JA TEHASE TOOTMISOHJE

Assessment and Verification of the Constancy of Performance (AVCP) of aggregates - Type testing and Factory Production Control

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 16236:2018 sisaldab Euroopa standardi EN 16236:2018 ingliskeelset teksti.	This Estonian standard EVS-EN 16236:2018 consists of the English text of the European standard EN 16236:2018.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
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Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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Assessment and Verification of the Constancy of Performance (AVCP) of aggregates - Type testing and Factory Production Control

Evaluation et Vérification de la Constance des Performances (EVCP) des granulats - Essais de types et Maîtrise de la production en usine

Bewertung der Konformität von Gesteinskörnungen - Erstprüfung und werkseigene Produktionskontrolle

This European Standard was approved by CEN on 24 April 2017.

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

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European foreword

This document (EN 16236:2018) 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of an identical text or by endorsement, at the latest by January 2019, and conflicting national standards shall be withdrawn at the latest by April 2020.

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

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

This European Standard is intended for use with future revisions (currently in preparation) of the standards listed below. It is not for use with the versions of these standards dated 2002 (plus amendment A1).

EN 12620, *Aggregates for concrete;*

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

EN 13139, *Aggregates for mortar;*

EN 13242, *Aggregates for unbound and hydraulic bound materials for use in civil engineering work and road construction;*

EN 13383-1, *Armourstone — Part 1: Specification;*

EN 13450, *Aggregates for railway ballast.*

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

Introduction

This European Standard has been written as the system for the Assessment and Verification of the Constancy of Performance (AVCP) of aggregates.

This European Standard is intended for use with future revisions (currently in preparation) of the standards listed below. It is not for use with the versions of these standards dated 2002 (plus amendment A1).

It is intended to be used in conjunction with the future aggregate product standards: EN 12620, EN 13043, EN 13139, EN 13242, EN 13383-1 and EN 13450 and will be called up by these standards. This European Standard and the corresponding product standards have been written under the Construction Products Regulation (CPR).

According to Annex ZA of these standards, the tasks relative to AVCP for the manufacturer comprise Type Testing (TT) and Factory Production Control (FPC).

This standard has been compiled from the TT and FPC clauses, annexes and tables previously found in the aggregate product standards. A further revision of this standard is currently under preparation, which will provide more detailed TT procedures and clear, detailed procedures for product conformity (e.g. statistical conformity criteria, number of samples, tolerances, time limits of validity, etc).

The type testing and factory production control procedures are designed to be applied to European Standards for aggregates. When the appropriate “conformity” clauses are applied, it forms part of the system of assessment and verification of constancy of performance as required by the Construction Products Regulation. It provides the minimum provisions for TT and FPC for CE Marking.

The testing procedures, using the reference test methods, have the function of providing assurance that a particular aggregate product conforms to each of the selected specified characteristics in the product standard. The type testing procedure is designed to be applied to all harmonized elements of European Harmonized Standards for aggregates.

The factory production control system describes control of the sourcing and processing of the aggregate combined with routine sampling and testing to provide ongoing assurance that the aggregates product continues to conform to those characteristics determined through TT. Testing within FPC may use either the standard reference tests called up by the aggregate product standards or other test procedures which have been shown to correlate with those tests.

For commercial and/or contractual reasons, the manufacturer can choose to perform more testing and inspection than the minimum specified.

1 Scope

This European Standard specifies both type testing and factory production control procedures for use during the assessment and verification of constancy of performance of aggregates.

Additional testing carried out within contracts is beyond the scope of this standard.

This European Standard is applicable to European Standards for aggregates if regulatory marking of conformity is to be applied. It is also applicable to European Standards for aggregates where regulatory marking does not apply.

This European Standard is applicable to the type testing and factory production control of aggregates within the scope of EN 12620, EN 13043, EN 13242, EN 13139, EN 13383-1 and EN 13450.

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 196-2, *Method of testing cement — Part 2: Chemical analysis of cement*

EN 196-6, *Methods of testing cement — Part 6: Determination of fineness*

EN 459-2, *Building lime — Part 2: Test methods*

EN 932-1, *Tests for general properties of aggregates — Part 1: Methods for sampling*

EN 932-3, *Tests for general properties of aggregates — Part 3: Procedure and terminology for simplified petrographic description*

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

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

EN 933-3, *Tests for geometrical properties of aggregates — Part 3: Determination of particle shape — Flakiness index*

EN 933-4, *Tests for geometrical properties of aggregates — Part 4: Determination of particle shape — Shape index*

EN 933-5, *Tests for geometrical properties of aggregates — Part 5: Determination of percentage of crushed and broken surfaces in coarse aggregate particles*

EN 933-6, *Tests for geometrical properties of aggregates — Part 6: Assessment of surface characteristics — Flow coefficient of aggregates*

EN 933-7, *Tests for geometrical properties of aggregates — Part 7: Determination of shell content — Percentage of shells in coarse aggregates*

EN 933-8, *Tests for geometrical properties of aggregates — Part 8: Assessment of fines — Sand equivalent test*

EN 933-9, *Tests for geometrical properties of aggregates — Part 9: Assessment of fines — Methylene blue test*

EN 933-10, *Tests for geometrical properties of aggregates — Part 10: Assessment of fines — Grading of filler aggregates (air jet sieving)*

EN 933-11, *Tests for geometrical properties of aggregates — Part 11: Classification test for the constituents of coarse recycled aggregate*

EN 1097-1, *Tests for mechanical and physical properties of aggregates — Part 1: Determination of the resistance to wear (micro-Deval)*

EN 1097-2, *Tests for mechanical and physical properties of aggregates — Part 2: Methods for the determination of resistance to fragmentation*

EN 1097-3:1998, *Tests for mechanical and physical properties of aggregates — Part 3: Determination of loose bulk density and voids*

EN 1097-4, *Tests for mechanical and physical properties of aggregates — Part 4: Determination of the voids of dry compacted filler*

EN 1097-5, *Tests for mechanical and physical properties of aggregates — Part 5: Determination of the water content by drying in a ventilated oven*

EN 1097-6, *Tests for mechanical and physical properties of aggregates — Part 6: Determination of particle density and water absorption*

EN 1097-7, *Tests for mechanical and physical properties of aggregates — Part 7: Determination of the particle density of filler — Pyknometer method*

EN 1097-8:2009, *Tests for mechanical and physical properties of aggregates — Part 8: Determination of the polished stone value*

EN 1097-9, *Tests for mechanical and physical properties of aggregates — Part 9: Determination of the resistance to wear by abrasion from studded tyres — Nordic test*

EN 1097-10, *Tests for mechanical and physical properties of aggregates — Part 10: Determination of water suction height*

EN 1367-1, *Tests for thermal and weathering properties of aggregates — Part 1: Determination of resistance to freezing and thawing*

EN 1367-2, *Tests for thermal and weathering properties of aggregates — Part 2: Magnesium sulfate test*

EN 1367-3, *Tests for thermal and weathering properties of aggregates — Part 3 : Boiling test for "Sonnenbrand basalt"*

EN 1367-4, *Tests for thermal and weathering properties of aggregates — Part 4: Determination of drying shrinkage*

EN 1367-5, *Tests for thermal and weathering properties of aggregates — Part 5: Determination of resistance to thermal shock*

EN 1367-6, *Tests for thermal and weathering properties of aggregates — Part 6: Determination of resistance to freezing and thawing in the presence of salt (NaCl)*

EN 1744-1, *Tests for chemical properties of aggregates — Part 1: chemical analysis*

EN 1744-4, *Tests for chemical properties of aggregates — Part 4: Determination of water susceptibility of fillers for bituminous mixtures*

EN 1744-5, *Tests for chemical properties of aggregates — Part 5: Determination of acid soluble chloride salts*

EN 1744-6, *Tests for chemical properties of aggregates — Part 6: Determination of the influence of recycled aggregate extract on the initial setting time of cement*

EN 1926:2006, *Natural stone test methods — Determination of uniaxial compressive strength*

EN 12620, *Aggregates for concrete*

EN 12697-11, *Bituminous mixtures — Test methods for hot mix asphalt — Part 11: Determination of the affinity between aggregate and bitumen*

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

EN 13139, *Aggregates for mortar*

EN 13179-1, *Tests for filler aggregate used in bituminous mixtures — Part 1: Delta ring and ball test*

EN 13179-2, *Tests for filler aggregate used in bituminous mixtures — Part 2: Bitumen number*

EN 13242, *Aggregates for unbound and hydraulically bound materials for use in civil engineering work and road construction*

EN 13383-1, *Armourstone — Part 1: Specification*

EN 13383-2, *Armourstone — Part 2: Test methods*

EN 13450, *Aggregates for railway ballast*

3 Terms and definitions

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

3.1
type testing
complete set of tests or other procedures, determining the performance of samples of aggregates representative of the product type

3.2
Declaration of Performance
DoP
expression of the performance of an aggregate in relation to its essential characteristics in accordance with the relevant harmonised standards