

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

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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|---|--|
| See Eesti standard EVS-EN 933-6:2014 sisaldab Euroopa standardi EN 933-6:2014 inglisekeelset teksti. | This Estonian standard EVS-EN 933-6:2014 consists of the English text of the European standard EN 933-6:2014. |
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English Version

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

Essais pour déterminer les caractéristiques géométriques
des granulats - Partie 6: Evaluation des caractéristiques de
surface - Coefficient d'écoulement des granulats

Prüfverfahren für geometrische Eigenschaften von
Gesteinskörnungen - Teil 6: Beurteilung der
Oberflächeneigenschaften - Fließkoeffizienten von
Gesteinskörnungen

This European Standard was approved by CEN on 6 February 2014.

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Foreword

This document (EN 933-6:2014) 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of an identical text or by endorsement, at the latest by October 2014, and conflicting national standards shall be withdrawn at the latest by October 2014.

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

This document supersedes EN 933-6:2001.

The main changes to the previous version of EN 933-6 are:

- Scope: Updated to conform SC6 resolution n°237/2006 on the possible use of other test methods under specified conditions, and also to allow the use of advanced test methods;
- Clause 5, Reference materials: a reference fine aggregate has been introduced to improve the precision data of the flow coefficient of fine aggregates;
- 6.4, Additional apparatus required for the determination of the flow coefficient of fine aggregates: a cylindrical feed hopper has been added to improve the precision data of the test;
- 8.5, Test report: the list of required data has been updated;
- Annex B, precision, B.2: The precision data for fine aggregate provided by France have been updated following a more recent interlaboratory experiment for which a cylindrical feed hopper was used.

This European Standard forms part of a series of tests for geometrical properties of aggregates. Test methods for other properties of aggregates will be covered by parts of the following European Standards:

EN 932, *Tests for general properties of aggregates*

EN 1097, *Tests for mechanical and physical properties of aggregates*

EN 1367, *Tests for thermal and weathering properties of aggregates*

EN 1744, *Tests for chemical properties of aggregates*

EN 13179, *Tests for filler aggregate used in bituminous mixtures*

The other parts of EN 933 are:

Part 1: Determination of particle size distribution — Sieving method

Part 2: Determination of particle size distribution — Test sieves, nominal size of apertures

Part 3: Determination of particle shape — Flakiness index

Part 4: Determination of particle shape — Shape index

Part 5: Determination of percentage of crushed and broken surfaces in coarse aggregate particles

Part 7: Determination of shell content — Percentage of shells in coarse aggregates

Part 8: Assessment of fines — Sand equivalent test

Part 9: Assessment of fines — Methylene blue test

Part 10: Assessment of fines — Grading of filler aggregates (air jet sieving)

Part 11: Classification test for the constituents of coarse recycled aggregate

According to the CEN/CENELEC Internal Regulations, the national standards organisations 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, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the reference method used for type testing, and in case of dispute, for determining the flow coefficient of coarse and fine aggregates. 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. Examples of advanced test methods can be found in the Bibliography.

This European Standard applies to coarse aggregate of sizes between 4 mm and 20 mm and to fine aggregate of size up to 2 mm.

NOTE 1 For coarse aggregates between 4 mm and 20 mm, the flow coefficient is linked with the percentage of crushed or broken surfaces of an aggregate and can therefore be used in association with the method specified in EN 933-5. Shape and surface texture characteristics also influence the result.

NOTE 2 Experience of this test has been generally limited to natural aggregates.

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 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 933-2, *Tests for geometrical properties of aggregates - Part 2: Determination of particle size distribution - Test sieves, nominal size of apertures*

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

EN 1097-6:2013, *Tests for mechanical and physical properties of aggregates - Part 6: Determination of particle density and water absorption*

3 Terms and definitions

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

3.1

aggregate size

designation of aggregate in terms of lower (d) and upper (D) sieve sizes expressed in terms as d/D

Note 1 to entry: This designation accepts the presence of some particles which will be retained on the upper sieve (oversize) and some which will pass the lower sieve (undersize).

3.2

constant mass

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

Note 1 to entry: 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 $(110 \pm 5) ^\circ\text{C}$. Test laboratories can determine the time required to