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I.S. EN 933-1:2012

Tests for geometrical properties of aggregates - Part 1: Determination of particle size distribution - Sieving method

I.S. EN 933-1:2012

Incorporating amendments/corrigenda/National Annexes issued since publication:

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English Version

Tests for geometrical properties of aggregates - Part 1: Determination of particle size distribution - Sieving method

Essais pour déterminer les caractéristiques géométriques
des granulats - Partie 1: Détermination de la granularité -
Analyse granulométrique par tamisage

Prüfverfahren für geometrische Eigenschaften von
Gesteinskörnungen - Teil 1: Bestimmung der
Korngrößenverteilung - Siebverfahren

This European Standard was approved by CEN on 29 October 2011.

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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.

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Foreword

This document (EN 933-1:2012) 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of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

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 supersedes EN 933-1:1997.

EN 933 — Tests for geometrical properties of aggregates, consists of the following parts:

- 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 6: Assessment of surface characteristics — Flow coefficient of aggregates;*
- *Part 7: Determination of shell content — Percentage of shells for 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 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, Turkey and the United Kingdom.

1 Scope

This European Standard describes the reference washing and dry sieving method used for type testing and in case of dispute, for determination of the particle size distribution of 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. It applies to all aggregates, including lightweight aggregates, up to 90 mm nominal size, but excluding filler.

NOTE 1 The determination of the grading of fillers is specified in EN 933-10 *Assessment of fines — Grading of filler aggregates (air jet sieving)*.

NOTE 2 Dry sieving without washing may be used for aggregates free from particles which cause agglomeration.

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

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

ISO 3310-2, *Test sieves — Technical requirements and testing — Part 2: Test sieves of perforated metal plate*

3 Terms and definitions

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

3.1

aggregate

granular material used in construction which may be natural, manufactured or recycled

3.2

test portion

sample used as a whole in a single test

3.3

constant mass

mass determined by successive weighings 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 (see 5.3) at $(110 \pm 5)^\circ\text{C}$. Test laboratories may determine the time required to achieve constant mass for specific types and sizes of sample dependent upon the drying capacity of the oven used.

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