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STN	**Skúšky na stanovenie geometrických charakteristík kameniva Časť 9: Hodnotenie jemných zŕn Skúška metylénovou modrou**	**STN EN 933-9 72 1186**

Tests for geometrical properties of aggregates - Part 9: Assessment of fines - Methylene blue test

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 05/22

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English Version

Tests for geometrical properties of aggregates - Part 9: Assessment of fines - Methylene blue test

Essais pour déterminer les caractéristiques géométriques des granulats - Partie 9 : Qualification des fines - Essais au bleu de méthylène

Prüfverfahren für geometrische Eigenschaften von Gesteinskörnungen - Teil 9: Beurteilung von Feinanteilen - Methylenblau-Verfahren

This European Standard was approved by CEN on 10 January 2022.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (EN 933-9:2022) 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of an identical text or by endorsement, at the latest by August 2022, and conflicting national standards shall be withdrawn at the latest by August 2022.

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

This document supersedes EN 933-9:2009+A1:2013.

In comparison with the previous edition, the following technical modifications have been made:

a) Normative references has been extended with EN 933-2 which is referenced in 6.1.7 Test sieves;

b) Terms and definitions has been extended with the definition of laboratory sample;

c) Clause 6 Apparatus has been restructured into two subclauses (6.1 general and 6.2 special), due to special apparatus (tinted glass bottle) used in former Annex C;

d) the test sieves in 6.1.7 are extended with 0,125 mm, which is used in normative Annex A;

e) the note in former Clause 6.4 about alternative types of mixers has been transformed to main text;

f) pre-drying temperature has been increased to (110 ± 5) °C for natural and manufactured aggregates (Clause 7) and the clause has been divided into General, Preparation without pre-drying and Preparation with pre-drying;

g) the procedure has been clarified with restructured text and an illustrating figure (Clause 8);

h) the Scope, the Terms and definitions and the Test report content have been adapted to the current rules and the text has been clarified;

i) the order of annexes has been changed, to place the normative annexes first;

j) the note in former Annex D, containing recommendations about checking of MB_{K}, has been transformed to main text in a new Clause C.1 General;

k) Annex A and former Annexes C and D have been restructured;

l) the titles of Annex A and former Annex D have been shortened;

m) the row numbers in Annex E have been deleted.

This document forms part of a series of tests for geometrical properties of aggregates. Test methods for other properties of aggregates are covered by the following European Standards:

— EN 932 (all parts), *Tests for general properties of aggregates*

— EN 1097 (all parts), *Tests for mechanical and physical 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 933 include:

— *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 in coarse aggregates*

— *Part 8: Assessment of fines — Sand equivalent test*

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

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

Any feedback and questions on this document should be directed to the users' national standards body. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This document specifies the reference method used for type testing and in cases of dispute, for the determination of the methylene blue value of the size 0/2 mm fraction in fine aggregates or all-in aggregates (*MB*). It also specifies the reference method for the determination of the methylene blue value of the size 0/0,125 mm fraction (MB_F) in normative Annex A. Other methods can be used for other purposes, such as factory production control, provided that an appropriate working relationship with the suitable reference method has been established.

Annex B specifies the preparation of 10 g/l methylene blue solution and Annex C specifies the procedure for the determination of the methylene blue value of kaolinite (MB_k). Annexes B and C are normative.

A conformity check, adding a single quantity of dye solution equivalent to a specified limiting value and which can be used as part of a production control process, is described in informative Annex D.

An example of a test data sheet is given in informative Annex E.

WARNING – The use of this part of EN 933 can involve hazardous materials, operations and equipment (such as dust, noise and heavy lifts). It does not purport to address all of the safety or environmental problems associated with its use. It is the responsibility of users of this document to take appropriate measures to ensure the safety and health of personnel and the environment prior to application of the standard, and fulfil statutory and regulatory requirements for this purpose.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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*