INTERNATIONAL STANDARD

ISO 19595

First edition
2017-07

Natural aggregates for concrete

Granulats pour béton

Reference number
ISO 19595:2017(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 71, *Concrete, reinforced concrete and pre-stressed concrete*, Subcommittee SC 3, *Concrete production and execution of concrete structures*.

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Natural aggregates for concrete

1 Scope

This document specifies the properties and requirements of aggregates obtained by processing natural materials and mixtures of these aggregates for use in concrete. It is applicable to aggregates with an oven-dried particle density greater than 2,00 Mg/m^3 (2 000 kg/m^3) in accordance with ISO 22965 (all parts).

This document incorporates a general requirement that natural aggregates are not intended to release any harmful substances in excess of the maximum permitted levels specified for the material or permitted in the national regulations of the place in use.

National provisions, preferably given in a national annex or a project specification, can specify additional or deviating requirements.

NOTE Requirements for the end use of aggregates in concrete are specified in ISO 22965 (all parts).

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.

ISO 6274, *Concrete — Sieve analysis of aggregates*

ISO 6782, *Aggregates for concrete — Determination of bulk density*

ISO 6783, *Coarse aggregates for concrete — Determination of particle density and water absorption — Hydrostatic balance method*

ISO 7033, *Fine and coarse aggregates for concrete — Determination of the particle mass-per-volume and water absorption — Pycnometer method*

3 Terms and definitions

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
aggregate
granular material of natural, manufactured or recycled origin used in construction

3.2
natural aggregate
aggregate from mineral sources which has been subjected to nothing more than mechanical processing, such as crushing, washing and sieving

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3.3
aggregate size
designation of aggregate in terms of lower (d) and upper (D) sieve sizes expressed as d/D

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

Note 2 to entry: Other designations may be used where specified in a national standard.

3.4
grading
particle size distribution expressed as the percentages by mass passing a specified set of sieves

3.5
fines
particle size fraction of an aggregate that passes the 0,063 mm sieve

Note 1 to entry: The 0,075 mm sieve may be used where specified in a national standard.

3.6
coarse aggregate
designation given to the larger aggregate sizes with D greater than 4 mm and d greater than or equal to 1 mm

Note 1 to entry: Aggregates that do not fit the definitions for fine or coarse (1 mm to 3 mm or 2 mm to 4 mm) are treated as coarse aggregate.

Note 2 to entry: Coarse aggregate may be separated by other sizes where specified in a national standard.

3.7
fine aggregate
designation given to the smaller aggregate sizes with D less than or equal to 4 mm and d = 0

Note 1 to entry: Fine aggregate can be produced from natural disintegration of rock or gravel and/or by the crushing of rock or gravel or processing of manufactured aggregates.

Note 2 to entry: Fine aggregate may be separated by other sizes where specified in a national standard.

3.8
all-in aggregate
aggregate consisting of a mixture of coarse and fine aggregates and fines with D greater than 4 mm and d = 0

Note 1 to entry: It can be produced without separating into coarse and fine fractions or it can be produced by combining coarse and fine aggregates.

3.9
filler aggregate
aggregate, most of which passes a 0,063 mm sieve, which can be added to construction materials to provide certain properties

Note 1 to entry: Other sieve sizes, as the 0,075 mm sieve, may be used where specified in a national standard.

3.10
declared value
value declared and documented by a manufacturer, which is derived from measured values under specified conditions and rules, for identification of performance requirements

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