
**Aggregates for concrete — Test
methods for mechanical and physical
properties —**

**Part 1:
Determination of bulk density,
particle density, particle mass-per-
volume and water absorption**

*Granulats pour béton — Méthodes d'essai relatives aux propriétés
mécaniques et physiques —*

*Partie 1: Détermination de la masse volumique apparente, de la
masse volumique des particules, de la masse volumique réelle et de
l'absorption d'eau*



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ISO copyright office
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

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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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This edition of ISO 20290-1, together with ISO 20290-2 and ISO 20290-3, cancels and replaces ISO 6274:1982, ISO 6782:1982, ISO 6783:1982 and ISO 7033:1987, which have been technically revised.

A list of all parts in the ISO 20290 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Aggregates for concrete — Test methods for mechanical and physical properties —

Part 1:

Determination of bulk density, particle density, particle mass-per-volume and water absorption

1 Scope

This document describes procedures for determining certain properties of aggregates for use in concrete for the determination of the loose or compacted bulk density, the determination of particle density and water absorption using the hydrostatic balance method and the determination of the particle mass-per-volume and water absorption using the Pycnometer method.

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 565, *Test sieves — Metal wire cloth, perforated metal plate and electroformed sheet — Nominal sizes of openings*

3 Terms and definitions

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

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

bulk density

ratio obtained by dividing the mass of a sample of aggregate filling a specified container by the known volume of the container, expressed in units of mass per unit volume, i.e. kilograms per cubic (1) meter (kg/m^3)

Note 1 to entry: In some countries, the phrases "unit mass", "unit weight" and "density" are used instead.

3.2

particle density

ratio obtained by dividing the mass of a sample of aggregate particles by the volume, including both permeable and impermeable pores within the particles (but not including the voids between the particles)

Note 1 to entry: It is expressed as a mass per unit volume, i.e. kilograms per cubic meter (kg/m^3).