International Standard

ISO 18985

Recycled aggregates for concrete

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Foreword

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

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.

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Introduction

The construction industry generates waste from various activities throughout the life cycle of buildings and civil engineering works. The wastes from the construction phase and the demolition phase, often called the construction and demolition waste, contain resources suitable for potential reuse in new construction. Concrete constitutes a major portion of construction and demolition waste in many countries. Landfilling of waste concrete is increasing in many countries and causes a shortage of available land area. It can also contaminate water and soil in the vicinity of the landfill site, usually due to alkalinity, and bring about social, economic, and environmental issues.

The waste concrete can be recycled in the form of aggregates for concrete after processing by crushing and sorting. This document primarily deals with the recycling of waste concrete in the form of recycled aggregates that can be used to produce concrete as a replacement for natural aggregates. This is the subject of growing interest due to increasing concrete construction and dwindling natural resources which are used as constituent materials to produce concrete. In some countries, the most abundant form of construction and demolition waste may not be the waste concrete, but other forms of waste such as demolished masonry units. This document sets the minimum requirements for the recycled aggregates made from waste concrete and others, used to produce concrete in a unified manner. Figure 1 shows how to use this document with other ISO standards.

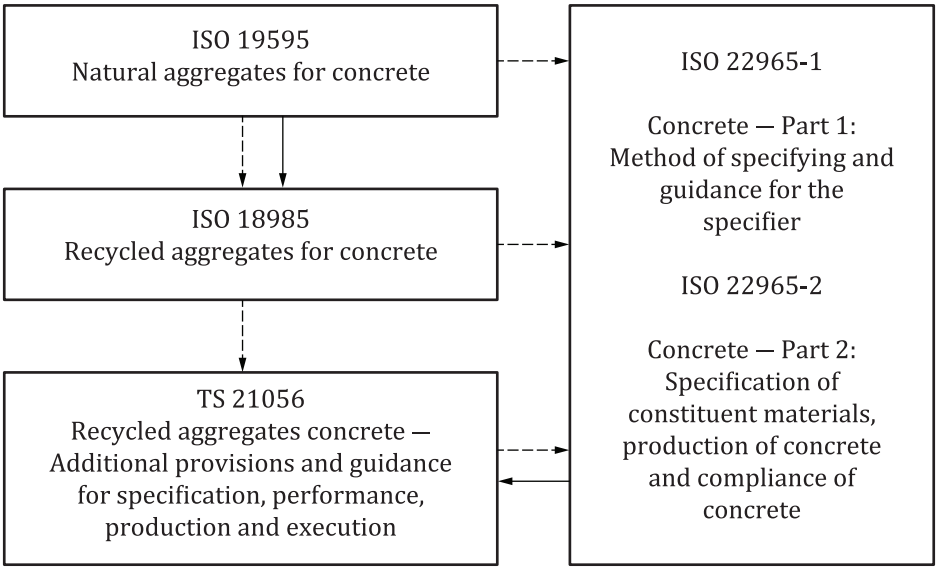


Figure 1 — Relationship of this document to other International Standards

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Recycled aggregates for concrete

1 Scope

This document provides principles and framework for use of recycled aggregates for concrete, which are produced from used resources primarily in the form of waste concrete. This document is intended to accelerate the use of recycled aggregates produced from construction and demolition wastes such as waste concrete and demolished masonry units. This document complements ISO 19595, natural aggregates for concrete, which does not include the minimum requirements for the recycled aggregates for concrete.

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 19595:2017, *Natural aggregates for concrete*

ISO 20290-1, *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*

ISO 20290-2, *Aggregates for concrete — Test methods for mechanical and physical properties — Part 2: Method for determination of resistance to fragmentation by Los Angeles Test (LA-Test)*

ISO 20290-5, *Aggregates for concrete — Test methods for mechanical and physical properties — Part 5: Determination of particle size distribution by sieving method*

ISO 24684-2, *Aggregates for concrete — Test methods for chemical properties — Part 2: Determination of soluble sulfate salts*

ISO 2859-2, *Sampling procedures for inspection by attributes — Part 2: Sampling plans indexed by limiting quality (LQ) for isolated lot inspection*

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

ASTM C88/88M, *Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate*

EN 1744-5, *Tests for chemical properties of aggregates — Part 5: Determination of acid soluble chloride salts*

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

EN 933-4, *Tests for geometrical properties of aggregates — Part 3: Determination of particle shape —Shape index*

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/

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