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NSAI Standards

Irish Standard
I.S. EN 13263-1:2005+A1:2009

Silica fume for concrete - Part 1: Definitions, requirements and conformity criteria

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I.S. EN 13263-1:2005+A1:2009

Incorporating amendments/corrigenda/National Annexes issued since publication:

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+A1:2009/NA:2010

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National Foreword

This Irish Standard is the national version of European Standard EN 13263-1 *Silica fume for concrete – Part 1: Definitions, requirements and conformity criteria* and includes a national annex that provides additional information and guidance to complement EN 13263-1.

The National Annex was prepared by Working Group 1 of NSAI Construction Products Standards Committee and subsequently sent for public consultation. The appended National Annex represents the final agreed text following this public consultation.

Requirements for the intended use of silica fume for concrete, mortar and grout are defined in National Annex NA of I.S. EN 13263-1.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with an Irish Standard does not of itself confer immunity from legal obligations.

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 13263-1:2005+A1

March 2009

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Supersedes EN 13263-1:2005

English Version

Silica fume for concrete - Part 1: Definitions, requirements and conformity criteria

Fumée de silice pour béton - Partie 1: Définitions, exigences et critères de conformité

Silikastaub für Beton - Teil 1: Definitionen, Anforderungen und Konformitätskriterien

This European Standard was approved by CEN on 19 May 2005 and includes Amendment 1 approved by CEN on 8 February 2009.

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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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 13263-1:2005+A1:2009) has been prepared by Technical Committee CEN/TC 104 “Concrete and related products”, the secretariat of which is held by DIN.

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 September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

This document includes Amendment 1, approved by CEN on 2009-02-08.

This document supersedes EN 13263-1:2005.

The start and finish of text introduced or altered by amendment is indicated in the text by tags ▌A1⟩ ⟨A1▌.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

▌A1⟩ EN 13263-1:2005+A1:2009 contains a modified requirement for the content of silicon dioxide in a new class 2. ⟨A1▌

EN 13263 consists of the following parts, under the general title *Silica fume for concrete*:

— Part 1: Definitions, requirements and conformity criteria;

— Part 2: Conformity evaluation.

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, 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 and United Kingdom.

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Introduction

Silica fume consists of mainly spherical particles of amorphous silicon dioxide smaller than 10^{-6} m and is highly pozzolanic. It is collected by filters as a by-product of the smelting process to produce silicon metal and ferro-silicon alloys. It can be supplied as collected from the filters (undensified), after treatment to increase its bulk density (densified), or as a slurry. Silica fume from more than one furnace, filter or intermediate storage silo will normally be blended in the production plant.

Many years of research and practical experience have demonstrated that silica fume which satisfies the requirements in this Part of this European Standard has highly pozzolanic properties, and may be used to produce concrete with improved properties in both the fresh and hardened states.

Silica fume is normally used in combination with a plasticizer and/or superplasticizer.

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1 Scope

This European Standard applies to the silica fume which is a by-product of the smelting process used to produce silicon metal and ferro-silicon alloys.

This part of EN 13263 gives requirements for chemical and physical properties for silica fume to be used as a type II addition in concrete conforming to EN 206-1, or in mortars, grouts and other mixes. This part of EN 13263 also states conformity criteria and related rules.

EN 13263 does not give rules for the use of silica fume in concrete. Some rules are given in EN 206-1.

NOTE 1 Supplementary rules related to the use of silica fume in concrete may be given in non conflicting national standards for concrete.

NOTE 2 EN 206-1 (5.2.5.1 in the 2000 edition) provides conditions for national acceptance of silica fumes coming from calcium silicon alloys production or other silica fumes, not conforming completely to EN 13263, as type II additions for use in concrete.

2 Normative references

The following referenced documents are indispensable for the application of this European Standard. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 196-1, *Methods of testing cement — Part 1: Determination of strength*

EN 196-2, *Methods of testing cement — Part 2: Chemical analysis of cement*

EN 196-6, *Methods of testing cement — Part 6: Determination of fineness*

[A1] EN 196-7:2007 [A1], *Methods of testing cement — Part 7: Methods of taking and preparing samples of cement*

EN 197-1, *Cement — Part 1: Composition, specifications and conformity criteria for common cements*

EN 206-1 *Concrete — Part 1: Specification, performance, production and conformity*

[A1] EN 413-2:2005 [A1], *Masonry cement — Part 2: Test methods*

EN 451-1, *Method of testing fly ash — Part 1: Determination of free calcium oxide content*

EN 934-2, *Admixtures for concrete, mortar and grout — Part 2: Concrete admixtures — Definitions, requirements, conformity, marking and labelling*

EN 13263-2:2005, *Silica fume for concrete — Part 2: Conformity evaluation*

ISO 9277, *Determination of the specific surface area of solids by gas adsorption using the BET method*

ISO 9286, *Abrasive grains and crude — Chemical analysis of silicon carbide*

3 Terms and definitions

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

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