ILNAS

Institut luxembourgeois de la normalisation
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ILNAS-EN 16622:2015

Silica-calcium fume for concrete - Definitions, requirements and conformity criteria

Siliko-Calciumstaub für Beton - Definitionen, Anforderungen und Konformitätskriterien

Fumées de silico-calcium pour béton - Définitions, exigences et critères de conformité

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National Foreword

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European foreword

This document (EN 16622:2015) 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of an identical text or by endorsement, at the latest by May 2016, and conflicting national standards shall be withdrawn at the latest by August 2017.

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For relationship with Regulation (EU) No. 305/2011, see informative Annex ZA, which is an integral part of this document.

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Introduction

Silica-calcium fume (SCF) according to this European Standard is a special type of silica fume containing some calcium. It is collected by filters as a by-product of the carbothermal process to produce silica-calcium alloys. It is only supplied as a densified product. SCF from more than one furnace, filter or intermediate storage silo will normally be blended in the production plant.

Many years of practical experience, especially in France, have demonstrated that SCF which satisfies the requirements in this European Standard has both hydraulic and pozzolanic properties, and may be used to produce concrete with improved properties in both the fresh and hardened states.

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

This European Standard is based on EN 13263-1 “Silica fume for concrete - Part 1: Definitions, requirements and conformity criteria”, with similar structure and requirements. The differences in the material properties is taken into account, for instance that silica-calcium fume is partly hydraulic unlike silica fume. When it comes to conformity, this European Standard refers to EN 13263-2 “Silica fume for concrete - Part 2: Conformity evaluation”.

1 Scope

This European Standard applies to the silica-calcium fume (SCF) which is a by-product of the carbothermal process used to produce silica-calcium alloys.

This European Standard gives requirements for chemical and physical properties for SCF to be used as a type II addition in concrete conforming to EN 206, or in mortars, grouts and other mixes. This European Standard also states conformity criteria and related rules.

This European Standard does not give rules for the use of SCF in concrete. Some general rules for the use of type II additions are given in EN 206.

NOTE Supplementary rules related to the use of SCF in concrete may be given in non-conflicting national standards for concrete.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. 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, *Method of testing cement — Part 2: Chemical analysis of cement*

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

EN 196-7, *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 413-2, *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 1097-7, *Tests for mechanical and physical properties of aggregates — Part 7: Determination of the particle density of filler — Pyknometer method*

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

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

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