

Irish Standard I.S. EN 14227-4:2013

# Specifications - Part 4: Fly ash for hydraulically bound mixtures

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# **EUROPEAN STANDARD**

EN 14227-4

# NORME EUROPÉENNE

**EUROPÄISCHE NORM** 

May 2013

ICS 93.080.20

Supersedes EN 14227-4:2004

#### **English Version**

# Specifications - Part 4: Fly ash for hydraulically bound mixtures

Mélanges traités aux liants hydrauliques - Spécifications -Partie 4: Cendre volante pour mélanges traités aux liants hydrauliques Hydraulisch gebundene Gemische - Anforderungen - Teil 4: Flugasche für hydraulisch gebundene Gemische

This European Standard was approved by CEN on 1 March 2013.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

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-CENELEC Management Centre has the same status as the official versions.

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EUROPEAN COMMITTEE FOR STANDARDIZATION COMITÉ EUROPÉEN DE NORMALISATION EUROPÄISCHES KOMITEE FÜR NORMUNG

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# EN 14227-4:2013 (E)

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#### **Foreword**

This document (EN 14227-4:2013) has been prepared by Technical Committee CEN/TC 227 "Road materials", 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of an identical text or by endorsement, at the latest by November 2013, and conflicting national standards shall be withdrawn at the latest by November 2013.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 14227-4:2004.

Compared with EN 14227-4:2004, the following changes have been made:

- Revision of Clause 4.2 "Requirements for siliceous fly ash";
- Revision of Clause 4.3 "Requirements for calcareous fly ash".

This standard is one of a series of parts for EN 14227, *Hydraulically bound mixtures* — *Specifications*:

- Part 1: Cement bound granular mixtures
- Part 2: Slag bound granular mixtures
- Part 3: Fly ash bound granular mixtures
- Part 4: Fly ash for hydraulically bound mixtures
- Part 5: Hydraulic road binder bound granular mixtures
- Part 10: Soil treated by cement
- Part 11: Soil treated by lime
- Part 12: Soil treated by slag
- Part 13: Soil treated by hydraulic road binder
- Part 14: Soil treated by fly ash

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#### EN 14227-4:2013 (E)

#### 1 Scope

This European Standard specifies siliceous and calcareous fly ash used in hydraulically bound mixtures for roads, airfields and other trafficked areas. This European Standard applies to fly ash produced by the combustion of pulverised coal or lignite in energy generating plants.

#### 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, Methods of testing cement Part 2: Chemical analysis of cement
- EN 196-3, Methods of testing cement Part 3: Determination of setting times and soundness
- 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 450-1, Fly ash for concrete Part 1: Definition, specifications and conformity criteria
- EN 451-1, Method of testing fly ash Part 1: Determination of free calcium oxide content
- EN 451-2, Method of testing fly ash Part 2: Determination of fineness by wet sieving
- EN 933-10, Tests for geometrical properties of aggregates Part 10: Assessment of fines Grading of filler aggregates (air jet sieving)

EN 13286-1, Unbound and hydraulically bound mixtures — Part 1: Test methods for laboratory reference density and water content — Introduction, general requirements and sampling

#### 3 Terms and definitions

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

#### 3.1

#### fly ash

fine powder produced by the combustion of pulverised coal or lignite with or without co-combustion materials (as defined in EN 450-1) in energy generating plants and captured by mechanical or electrostatic precipitators

#### 3.2

### siliceous fly ash

#### (alumino-silicate fly ash)

fly ash where the essential chemical components are silicates, aluminates and iron oxides, expressed as  $SiO_2$ ,  $Al_2O_3$  and  $Fe_2O_3$  and which has pozzolanic properties

Note 1 to entry: It may be stored, supplied and used either in a wet or dry condition.



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