

Pulverized-fuel ash

Part 3. Specification for pulverized-fuel ash for use in cementitious grouts

ICS 91.100.99

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Committees responsible for this British Standard

The preparation of this British Standard was entrusted by Technical Committee B/516, Cement and lime, to Subcommittee B/516/101, Pozzolanas, upon which the following bodies were represented:

- British Aggregate Construction Materials Industries
- British Cement Association
- British Precast Concrete Federation
- Cementitious Slag Makers' Association
- Department of the Environment (Building Research Establishment)
- Electricity Association
- Quality Ash Association

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Foreword

This British Standard has been prepared by Subcommittee B/516/101. It takes into account current practice followed in the selection and use of pulverized-fuel ash (pfa) in grout. With BS 3892 : Part 2 : 1996 it supersedes BS 3892 : Part 2 : 1984, which is withdrawn.

Pulverized-fuel ash is extracted from the flue gases of furnaces fired by pulverized bituminous or other hard coal. It is a fine material, predominantly of spherical, glassy particles. Though not reacting directly with water, it can react with the calcium hydroxide in solution produced by the hydration of Portland cements to form additional insoluble hydrates and thus contribute to the strength of grout.

BS 3892 : Part 1 was revised in 1997 and specifies pfa for use in concrete as a cementitious component, defined as a Type II (pozzolanic) addition in DD ENV 206.

BS 3892 : Part 2 : 1996 specifies pfa to be used in concrete as a Type I (essentially inert) addition as it may have both a high sieve residue and a high loss on ignition.

This Part of BS 3892 specifies pfa with higher limits for sieve residue and loss on ignition than specified in Part 1, for use in cementitious grouts.

Where some control over the grout properties is important, such as grouting behind tunnel linings, then performance related tests are required which assess the suitability of the pfa for use in grout. Such tests are included in annexes B and C.

This standard does not apply to grouts for ducts for prestressing tendons, which are specified in BS EN 447¹⁾.

This Part, in comparison with the 1984 edition of Part 2, introduces the following changes.

- a) The methods for sampling and testing are now in accordance with BS EN 196, except for fineness and moisture content, which are in accordance with BS 3892 : Part 1.
- b) The requirement has been removed for magnesium oxide content, as research has found no evidence of periclase in pfa from bituminous or other hard coals.
- c) Additional tests have been included for fluidity and strength activity to assess the suitability of pfa in grouts for particular uses.
- d) Additional guidance on use, safety precautions and storage has been added.

Unlike in Part 1 of this standard, the values given in this Part and in Part 2 are limit values.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

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¹⁾ In preparation.