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TECHNICAL INFORMATION

BLUE CIRCLE FLY ASH N[®]

Fineness Category N (BS EN 450-1) **Bulk Product Data Sheet**

Tarmac's Blue Circle Fly Ash N is a quality-assured fly ash suitable for use in combination with Portland cement (CEM I) in concrete. Particular uses include:

- Minimising the risk of ASR in concrete containing reactive aggregate.
- Large pours to reduce the risk of early-age thermal cracking.
- Concrete exposed to sulfates or aggressive ground.
- Concrete exposed to chlorides.

Blue Circle Fly Ash N is a quality-assured fly ash conforming to BS EN 450-1: Fineness Category N, with a loss of ignition of not greater than 7% (LOI Category B).

Blue Circle Fly Ash N is a type II addition suitable for use in mixer combinations with Portland cement (CEM I) as defined in BS 8500: Concrete-Complementary British Standard to BS EN 206.

APPLICATIONS

Blue Circle Fly Ash N can be combined with Portland cement (CEM I) in the concrete mixer. Guidance on the appropriate combination for different applications is available in BS 8500: Concrete-Complementary British Standard to BS EN 206 and from the Tarmac Cement Technical Helpdesk.

Combinations of Blue Circle Fly Ash and Portland cement (CEM I) are recommended for many applications including:

- **Large concrete pours.** Combinations of Portland cement (CEM I) with higher proportions of Blue Circle Fly Ash N (typically 30% or more) can significantly reduce the temperature rise in large concrete pours and hence reduce the risk of early-age thermal cracking.



DESIGNATION OF MIXER COMBINATIONS

BS 8500 Designation	Proportion of Fly Ash (%)	Equivalent BS EN 197-1 Cement
CIIA-V	6-20	CEM II/A-V
CIIB-V	21-35	CEM II/B-V
CIVA-V	11-35	CEM IV/A
CIVB-V	36-55	CEM IV/B

- **Concrete exposed to the ground.** BRE Special Digest 1: Concrete in aggressive ground indicates that combinations of Portland cement (CEM I) with 25% or more of Blue Circle Fly Ash can be used in all sulfate exposure classes apart from DC-4m.
- To improve the resistance of concrete to reinforcement corrosion when exposed to chlorides from seawater or other sources.
- To minimise the risk of alkali-silica reaction in concrete: Combinations of Portland cement (CEM I) with 40% or more Blue Circle Fly Ash are recommended by BS 8500: *Concrete-Complementary British Standard to BS EN 206* for use with high reactivity aggregates and BRE Digest 330: *Alkali-silica reaction in concrete*.

PROPERTIES

The properties of concrete containing Blue Circle Fly Ash combined with Portland cement (CEM I) will depend on the proportion of fly ash. When compared with Tarmac Cement concrete at the same cement content, the following differences may be noticed:

- Reduced water demand.
- Extended setting times, particularly in cold weather.
- Improved workability retention.

The content of this data sheet is correct at the date of publication. Please check our website: www.tarmac-bluecircle.co.uk/bulk for any subsequent changes.

For further information

www.tarmac-bluecircle.co.uk/bulk

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- Reduced bleeding.
- Improved pumpability.
- Slower and more gradual strength development with potentially higher long-term strength (after 28 days).
- Improved strength when heat cured.
- Slightly darker colour.

AVAILABILITY

Blue Circle Fly Ash is only available in bulk. Details of availability can be obtained from the contacts listed below.

HEALTH AND SAFETY

There are no known significant health risks associated with fly ash. However, as an airborne dust it may cause irritation to the eyes and respiratory system. Prolonged contact with the skin may also cause skin irritation.

For further information refer to the Blue Circle Health and Safety Information Sheet for Fly Ash.

TECHNICAL SUPPORT

Further information and advice on this product and the full range of Tarmac Cement products can be obtained through the contacts listed below.



The information in this data sheet is accurate at the time of printing, but Tarmac reserves the right to amend details as part of its product development programme. The information given in this technical data sheet is based on our current knowledge and is intended to provide general notes on our products and their uses. Tarmac endeavour to ensure that the information given is accurate, but accept no liability for its use or its suitability for particular application because of the product being used by the third party without our supervision. Any existing intellectual property right must be observed.