

# Lafarge Phoenix<sup>®</sup>

## Portland-Fly Ash Cement

(CEM II/B-V 42,5N)



bringing materials to *life*™

A factory manufactured Portland-fly ash cement. Suitable for:

- Large pours, to reduce the risk of early-age thermal cracking.
- Reducing attack on concrete in sulfate conditions.
- Improved surface finish of concrete.

Phoenix<sup>®</sup> Portland-fly ash cement conforms to BS EN 197-1 CEM II/B-V 42,5N.

Phoenix Portland-fly ash cement is a quality assured cement with independent third party certification and carries a CE Mark.

### Applications

Phoenix is a Portland-fly ash cement that is recommended as an alternative to Lafarge Portland Cement in the following applications:

- As a moderately low-heat cement to reduce the risk of early-age thermal cracking in large pours.
- To reduce attack on concrete in chemically aggressive ground conditions as defined in Building Research establishment Special Digest 1 and BS 8500: Concrete – Complementary British Standard to BS EN 206-1, where it is designated as CEM II/B-V+SR.
- To improve the surface finish of concrete, particularly in harsh and low cement content mixes.

### Properties

Phoenix Portland-fly ash concrete – when compared with Lafarge bulk Portland cement concrete at the same cement content – has the following properties:

- Slower strength development and potentially higher long-term strength.
- The appropriate cement content for concrete of a given 28 day cube strength and slump should be determined from trial mixes.
- The cement content may differ from that of an equivalent Portland cement (CEM I) concrete in certain circumstances. In particular, where a high strength concrete is required, the cement content may be slightly higher than for CEM I.
- Slower setting times.
- Reduced water demand.
- Improved placing and finishing.
- Darker in colour.

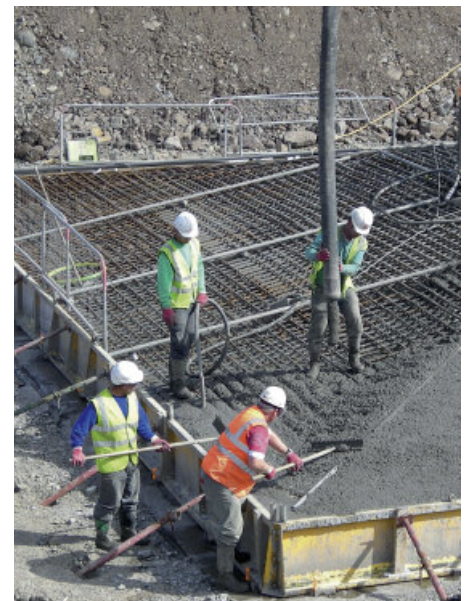
### Availability

Phoenix Portland-fly ash cement is available in bulk only. Details of availability can be obtained through the contacts listed overleaf.

### Conditions of Use

- Concrete, mortars and grouts containing Phoenix Portland-fly ash cement must be specified and used correctly for best performance.

- The cement content must be correct and the water:cement ratio as low as possible consistent with satisfactory placing, thorough compaction and effective curing. When using Phoenix, it is particularly important that effective curing is applied. See the Lafarge Information Sheet 'Site Guide for using Phoenix Concrete' for further details.
- The final finish quality of this material will depend upon the operative having the required skills and a familiarisation with the materials and its application methods.



Phoenix Portland-fly ash cement being used at Whitelee windfarm, Scotland

# PHOENIX® PORTLAND-FLY ASH CEMENT

- Lafarge Cement UK cannot be held responsible where workmanship has not been carried out in accordance with good practice.
- Phoenix Portland-fly ash cement is manufactured from natural products, and slight shade variations may occur. Lafarge Phoenix will also have shade variations from differing manufacturing centres.

## Technical Support

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

## Health and Safety

Contact between cement powder and body fluids (eg, sweat and eye fluids) may cause irritation, dermatitis or burns. Cement is classified as an irritant under the Chemicals (Hazard Information and Packaging) Regulations.

For further information, including control of soluble hexavalent chromium, refer to the Lafarge Health and Safety information sheet for Portland cement products.

## Typical properties (For guidance only, not to be used for specification purposes)

Surface area	(m <sup>2</sup> /kg)	380 to 450
Setting time – initial	(minutes)	125 to 195
BS EN 196-1 Mortar compressive strength		
– 2 day	(N/mm <sup>2</sup> )	18 to 28
– 7 day	(N/mm <sup>2</sup> )	30 to 40
– 28 day	(N/mm <sup>2</sup> )	47 to 57
Apparent particle density	(kg/m <sup>3</sup> )	2900 to 3000
Bulk density	(kg/m <sup>3</sup> )	
– Aerated		1000 to 1300
– Settled		1300 to 1400
Colour	CIELab L*	50.0 to 60.0
Sulfate	SO <sub>3</sub> (%)	2.3 to 2.8
Chloride	Cl (%)	Less than 0.04
Alkali	Eq Na <sub>2</sub> O (%)	0.30 to 0.60
Fly ash	(%)	25 to 35

*Phoenix Portland-fly ash cement is Portland cement clinker combined with fly ash and a small proportion of gypsum. Portland cement clinker comprises predominantly compounds of calcium silicate and calcium aluminate. It is produced by burning or sintering, at a temperature in excess of 1400°C, a finely ground mixture of raw materials containing calcium carbonate, aluminium oxide, silica and iron oxide.*

## For further information

### Technical helpline

Tel: 0845 812 6232

E-mail: [info@uk.lafarge.com](mailto:info@uk.lafarge.com)

### Customer services

Tel: 0845 812 6300

E-mail:

[customerservice@uk.lafarge.com](mailto:customerservice@uk.lafarge.com)

The information in this datasheet is accurate at the time of printing, but Lafarge Cement UK reserve the right to amend details as part of their product development programme.

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