



Boral Cement

Blue Circle® Fly Ash



Product Data Sheet

The information stated herein and all advice given should be taken as a guide only. Both are given in good faith and are to the best of our knowledge true and accurate and are intended to give a fair description of the product and its capabilities under specific test conditions. No guarantee of the accuracy or completeness of the information is made and persons receiving the information should make their own tests to determine suitability thereof in all respects for their particular purpose. Revised: July 2010

Boral Cement

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Fly Ash is a pozzolan; a fine grey powder resembling cement, which is low in lime content, and possesses in itself little or no cementitious properties however, will, in its finely divided form in the presence of moisture, react chemically with calcium hydroxide (e.g. from lime or cement) at ordinary temperatures to form insoluble compounds possessing cementitious properties.

Uses

Fly Ash can be combined with other materials to produce high quality and economical results for:

- pre-mixed concrete.
- stabilised road base.
- roller compacted concrete pavements.
- concrete sub-base.
- conventional concrete pavements.
- roller constructed concrete dams.
- concrete products.

Fly Ash can also be used as a filler in the manufacturing of many products. It has been successfully used in asphalt, rubber and other manufactured products.

Typical Chemical Composition

The following table provides an example of the typical chemical composition of Eraring and Mt Piper **Fly Ash** products:

Element	Eraring	Mt Piper
Al ₂ O ₃	24.0%	23.8%
CaO	1.59%	0.31%
Fe ₂ O ₃	2.87%	1.72%
K ₂ O	1.44%	2.46%
MgO	0.42%	0.27%
MnO	0.06%	0.03%
Na ₂ O	0.49%	0.25%
P ₂ O ₅	0.19%	0.11%
SiO ₂	65.9%	67.0%
TiO ₂	0.915%	0.995%
LOI	1.53%	1.20%
Fineness	87%	86%

Technical Features

- Improved workability.
- Improved pumpability.
- Reduction in heat of hydration.
- Improved resistance to alkali aggregate reaction.
- Resistance to sulphate attack.
- Reduction in permeability.
- Reduction in drying shrinkage and creep.
- Good carbonation and corrosion protection with appropriate curing.

Properties

The three test methods for **Fly Ash** are fineness, loss on ignition (LOI) and chemical composition. These are governed by Australian Standards covered in AS 3582.1.

- **Fineness:** Fineness measured by determining the wet sieve residue on a 45 micron sieve.
- **Loss on Ignition (LOI):** Loss on ignition provides an indication of the unburnt carbon (coal) present in the ash.
- **Chemical Composition:** of **Fly Ash** is dependent upon the coal being fired. The chemistry of an ash affects its performance.

Mix Design

Proposed mix designs using **Fly Ash** should be evaluated for performance prior to commencing production. By fine tuning, concrete characteristics can be optimised to achieve desired performance.

Availability

Fly Ash products are delivered in bulk pressure tankers to site, 1 tonne bulka bags, or 15 kg multi-walled paper sacks.

Storage

The "shelf life" of **Fly Ash** is dependent on the storage conditions, as contact with air and moisture will cause deterioration in performance.

Safe Handling

Avoid generating dust. Wash product off unprotected skin immediately with water. The use of goggles, dust masks, barrier creams and rubber gloves is recommended.

For further safety information consult the **Material Safety Data Sheet** for the product.

