



ULTRACHEM
For Construction Chemicals

Ultra - ADD FLY Ash

A Strength-increasing powder additive for Portland cement - based mixes.



Admixtures For Concrete

Product Overview

Fly Ash powder is a fine siliceous dust selectively collected in Australia from the controlled combustion of pulverised black coal. During the combustion process, the bulk of the particles formed are microscopic spheres. Light grey in color, and are of a much more rounded particle shape than Portland cement. In the presence of hydrating Portland cement, Fly Ash powder behaves like a secondary cement by reacting slowly at ambient temperatures with Calcium Hydroxide (lime) liberated during these long-term hydration reactions of water with cement. Chemically, the spherical particles of Fly Ash are composed mainly of glassy compounds of silica, alumina, iron and calcium. The product can be regarded as virtually inert and therefore may, after adequate testing be suitable for incorporation into coatings, plastics, adhesives, rubber and other composite materials as a non-hiding, light grey extender/filler pigment at low cost.



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Uses

Ultra - ADD Fly Ash is used in structural concrete, precast concrete and other fields of concrete constructions where high demands are imposed on the quality of fresh and hardened concrete such as :

- 1- High-rise structures.
- 2- Dams and roads.
- 3- Power stations.
- 4- Bridges and tunnels.

Also as a cost lowering, binder reducing and abrasion resisting additive for plastics, paints, adhesives, rubber etc, virtually all types of mortars/grouts, floors, screeds and toppings etc.as well In bituminous concrete, slab-jacking, soil stabilisation, mine shaft fill, filtration, as a plastic consistency improving additive for baked clay products etc, road base, in embankment construction, as well as for back fill etc.



Advantages

Ultra - ADD Fly Ash contains extremely fine latently reactive silica presence of this substance imparts greatly improved internal cohesion and water retention. When additionally using Ultra ADD super plasticizer, the concrete will show the following properties:

- Excellent workability it's Improved pumpability, extrudability and spray ability.
- Increased durability.
- High early strengths.
- Increased ultimate strengths.
- Increased resistance to abrasion.
- Highly Reduced water requirement for a given plastic consistency.
- Reduced bleeding of mix water to the surface and the reduction or elimination of segregation of the aggregates from the cementitious paste.
- Highly reduced chloride diffusion.
- Easy to work and economic benefits.
- Chloride free - does not attack any reinforcement.

In hardened concrete:

- Reduced drying-shrinkage and creep (volume deformation under sustained load).
- Reduced permeability to liquids.
- Increase resistance to sulphate attack from sulphate containing ground waters.
- Enhanced resistance to alkali aggregate reaction (AAR) and subsequent spalling.
- Increased resistance to freezing and thawing degradation.
- Greater resistance to acids and chemical attack.



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Description

Ultra - ADD Fly Ash is a concrete additive of a new generation in fine powder form and spherical particles which reduces the water requirements and creates a lubricating effect that causes concrete to flow and pump better. In addition the concrete is more cohesive and is less prone to segregation.

Properties

The three test methods for Fly Ash are fineness, loss on ignition (LOI) and chemical composition.

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.
Appearance / Color	Grey- fine powder / odorless
Composition	Alumina silicate pozzolan
Specific Gravity Typically	2.2

Directions for Use

Dosage

25 - 35 % by weight of cement. For optimum results in concrete, always use in conjunction with **Ultra ADD super plasticizer**.

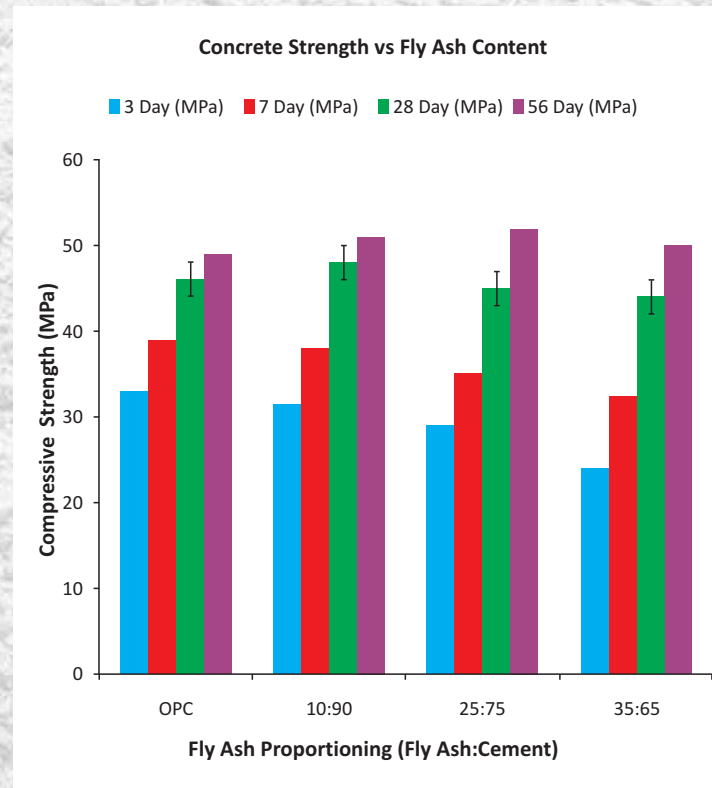
Mixing

Ultra - ADD Fly Ash is added with the cement to the concrete at the batching plant before the gauging water. Optimum mixing time 90-seconds.

The quantity of water should be adjusted to suit the dosage of **Ultra - ADD Fly Ash**, Ultra ADD and the final consistency required.

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.





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Storage

Shelf life

Ultra - ADD Fly Ash has a shelf life of 12 months from date of production in unopened original packing. The "shelf life" of **Ultra - ADD Fly Ash** is dependent on the storage conditions, as contact with air and moisture will cause deterioration in performance.

Storage conditions

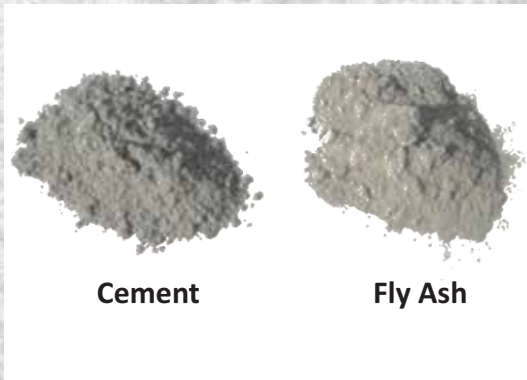
Ultra - ADD Fly Ash is not affected by frost. It must be stored in dry conditions.

Important Note

Ultra - ADD Fly Ash concrete should be handled and placed in the same way as conventional mixes. Standard good concrete practice should be observed throughout, and proper curing procedures should be initiated immediately after placement.

Health and safety

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.





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