

Pozz-Fill

®

Engineering with ash

Pozz-Fill®: Reactive cementitious filler for use in the production of cement and concrete products.

Uses

- To improve the lubrication and workability of the mix while reducing the water content and lowering the water: cement ratio
- To increase strength of the finished concrete product without increasing cement content
- To reduce bleed and segregation facilitating easier placing, particularly by pump
- Filler for the production of fly-ash extended pre-blended cements
- Structural fill in civil engineering, applications eg. road sub-base
- Particularly suited for grout packs and back-filling in the Mining Industry
- Pozz-Fill particles range from 120 micron to sub micron in size. This grading improves concrete material curves, particularly where there are deficiencies in the particle size distribution of the sand or cement.
- Enhanced mix rheology, particularly under vibration
- Reduced bleed and segregation
- Improved water/cement ratio and durability
- Facilitates compaction and place-ability of the mix
- Improves quality of fine aggregates with deficiencies in particle size distribution
- Environmental friendly

Description

Pozz-Fill® is produced as a by-product in thermal power generation. The product is spherical in shape and comprises of particles ranging in size from 120 micron to sub-micron in size. This unique combination of particle size distribution and chemical composition of Pozz-Fill® enables the product to impart significant features and benefits when added to the concrete mix or when included in the cementitious binder. Pozz-Fill® is supplied dry and is light grey in colour.

Standards Compliance

Pozz-Fill® does not conform to the requirements of SANS 1491 Part 2;



Magnified illustration of Pozz-Fill® particles

BS EN450 Part 1 (recognised standards for Classified fly-ash and Pfa.)

Quality Assured

All products produced by Ash Resources are controlled and tested with its ISO 9001 quality management system thereby ensuring our customers of the highest levels of consistency and service. Pozz-Fill® is produced from plants carrying this internationally recognised quality accreditation.

Technical Support

Ash Resources provide a technical advisory service for on-site assistance and advice on

Advantages

- Improved cementitious binder economics
- Allows higher later age strength development due to products' pozzolanicity
- Improved surface finish and texture



Mine support systems



Above and Below: Semi-dry concrete manufacture





Grouting

mix design, evaluation trials and all aspects of our product applications and handling. Technical data and guidance can be provided for Pozz-Fill® and other products in our range.

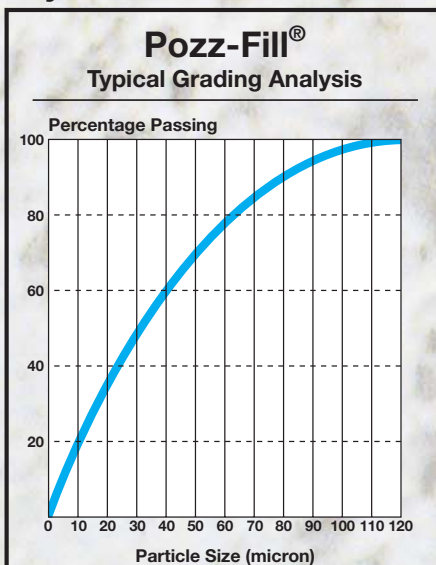
Properties

Typical Chemical Composition %

Pozz-Fill®			
Silicon (SiO ₂)	51.0	-	65.0
Aluminium (Al ₂ O ₃)	25.0	-	35.0
Iron (Fe ₂ O ₃)	3.0	-	5.0
Manganese (Mn ₂ O ₃)	0.1	-	0.15
Calcium (CaO)	1.0	-	6.0
Magnesium (MgO)	0.5	-	2.0
Phosphorus (P ₂ O ₅)	0.3	-	0.7
Potassium (K ₂ O)	0.5	-	1.0
Sodium (Na ₂ O)	0.1	-	0.6
Titanium (TiO ₂)	1.6	-	2.0
Sulphur (SO ₃)	0.1	-	0.3
Loss On Ignition (LOi)	0.8	-	2.5

Please Note: the above table represents the typical range in chemical notation encompassing Pozz-Fill® produced by Ash Resources at all plants. Pozz-Fill® produced at a specific plant exhibits a consistent chemistry over narrower composition parameters.

Physical characteristics



Wet sprayed concrete

Applications

Pozz-Fill®, with its' characteristics in terms of spherical shape, size distribution and chemistry significantly enhances the performance of concrete

- Ready-mixed concrete - in a wide range of standard and design mixes, particularly suited where crushed aggregates are used
- Pre-cast - in the manufacture of dry and semi-dry products as well as wet cast applications. Improved vibration, compaction and aesthetics are a feature of Pozz-Fill® concretes
- Mining Industry - grout packs, back-filling and wet sprayed concrete benefit from the inclusion of Pozz-Fill® in the mix constituents
- Civil Engineering and Industrial - Pozz-Fill® is well proven in road sub-base, asphalt and refractory applications

Packaging and Distribution

Pozz-Fill® is available in bulk from Ash Resources in quantities of 25 - 34 tons per load. The product is supplied dry and for estimating purposes the loose bulk density is typically 1100Kg/m³. Once a central shipping order is confirmed the product can either be collected from the plant or delivered by Ash Resources, utilising the fleet of road tankers at the company's disposal. In the case of Ash Resources delivery, conditions do apply.

Health and Safety

Testing has shown, Pozz-Fill® to be non toxic and environmentally benign. There are no known health risks associated with Pozz-Fill®, but as an airborne dust it may cause irritation to eyes and respiratory system. Being alkaline in nature, prolonged skin contact may cause irritation in susceptible individuals. For further information please consult the Material Safety Data Sheet available for this product.

Pozz-Fill® is the registered trade-mark of Ash Resources (Pty) Ltd.

Below: Concrete retaining walls

AshResources

Fly ash products

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