

10.101 - GENERAL USE



High Reactivity Metakaolin (HRM) Engineered Mineral Admixture For Use With Portland Cement

USE *PowerPozz™* in:

- **High Performance, High Strength and Lightweight** concrete
- **Precast Concrete** for Architectural, Civil, Industrial, and Structural
- **Fibercement** and Ferrocement products, Glass Fiber Reinforced Concrete
- **Mortars, Stuccos, Repair Material, Pool Plasters**
- **Manufactured Repetitive Concrete Products**

USE *PowerPozz™* for:

- **Increased Compressive & Flexural Strengths**
- **Reduced Permeability & Efflorescence**
- **Increased Resistance to Chemical Attack & Prevention of ASR**
- **Reduced Shrinkage**
- **Improved Finishability, Color & Appearance**

USING *PowerPozz™*:

PowerPozz™ should be used in terms of total cement weight at 5-15% loading rate. Tests have shown that for optimum pozzolanic reactivity with $\text{Ca}(\text{OH})_2$, an 8% replacement is efficient. For prevention of ASR or efflorescence, as well as for enhanced durability in GFRC, higher loading rates, up to 15% by weight of cement may prove to be most effective.

In terms of concrete works, as always, good production and construction practices must be observed. Most importantly the water/cement ratio must be controlled. When using *PowerPozz™* in concrete, the use of superplasticizers, entrained air, and/or fly ash is recommended to help increase and maintain placement slumps without increasing the water content. Ask your ACT representative for assistance in testing and optimizing your formulation.

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CEMENT REPLACEMENT / ADDITION

PowerPozz™ substituted directly for or added to OPC at 5 - 15% by weight will:

- Greatly reduce porosity and permeability
- Increase early (1-28 day) compressive strengths
- Improve late (56+ day) strengths
- Provide long term durability where ASR is a concern
- Reduce occurrence of efflorescence
- Provide enhanced resistance to chemical attack (sulfates, chlorides, acids).

POZZOLANIC SUBSTITUTION

If you are already using a high performing pozzolan in your production (i.e. silica fume/microsilica) *PowerPozz™* can be substituted directly. In terms of compressive strength, a reduction of the addition rate of *PowerPozz™* may be possible for equivalent performance. Testing with specific cements, aggregates, admixtures, etc., is strongly recommended to confirm appropriate proportioning. Further, the potential to reduce the dosage of superplasticizer required in a *PowerPozz™* formulation from that of a comparable silica fume mix is possible.

Substituting *PowerPozz™* for silica fume in existing formulations will:

- Maintain or increase compressive strengths at early ages (1-28 days),
- Maintain long term compressive strength development (>28 days),
- Disperse more easily in the mixer with less dust,
- Not darken the color of the paste or mortar, and
- Reduce superplasticizer demand for the target slump.

***PowerPozz™* is compatible with chemical admixtures, as well as with other pozzolans and supplementary cementing materials, i.e.: fly ash, ground granulated blast furnace slag.**