

10.103 - PARTICLE SIZE DISTRIBUTION (PSD)



High Reactivity Metakaolin (HRM) Engineered Mineral Admixture for Use with Portland Cement

Advanced Cement Technologies' PowerPozz™ HRM is a manufactured pozzolanic mineral admixture which significantly enhances many performance characteristics of cement-based mortars, concretes, and related products.

PowerPozz™, derived from purified kaolin clay, is a white, amorphous, alumino-silicate which reacts aggressively with calcium hydroxide to form compounds with cementitious value.

Produced under ISO 9002, PowerPozz™ is subjected to strict process quality controls to assure product uniformity and consistent performance.

Used at 5-15% replacement of cement by weight, PowerPozz™ will contribute to: increased strength; reduced permeability; greater durability; and effective control of efflorescence and degradations caused by alkali-silica reaction (ASR) in concrete.

PowerPozz™ is milled and classified to exacting particle size distribution specifications.

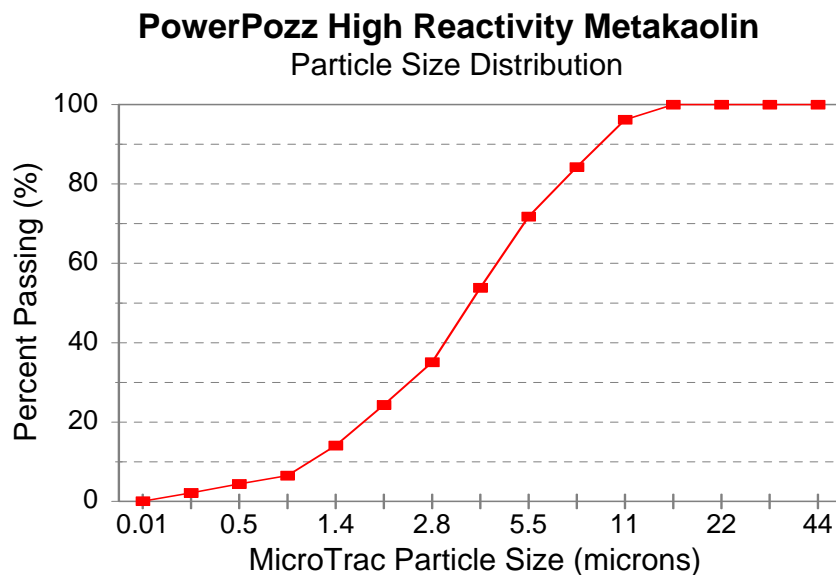
In optimizing the PSD for PowerPozz™, a number of factors were considered to be important:

- Pozzolanic reactivity and rate of reaction
- Micropacking characteristics when used with Ordinary Portland Cement (OPC)
- Effect on water demand and /or water-reducing admixture demand
- Dispersion efficiency in batching and mixing processes

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- Dry product handling and storage characteristics
- Effect on fresh product rheological characteristics
- Color, brightness, reflectivity

The PowerPozz™ PSD is illustrated below:



The material is 99.9% finer than 16um, and has a mean particle size of 3um (as measured by MicroTrac laser diffraction granulometer method). The PSD of PowerPozz™ has been engineered with a range of OPC - based applications in mind. ACT has the ability to custom grind and classify to meet unique customer requirements.

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