LayFume

Silica Fume Early Strength and Reduced Permeability Concrete Admixture

PRODUCT DESCRIPTION: LayFume Silica fume can make a significant contribution to early-age strength of concrete. One pound of silica fume produces about the same amount of heat as a pound of portland cement, and yields about three to five times as much compressive strength.
Silica fume improves concrete in two ways the basic pozzolanic reaction, and a microfiller effect. Addition of silica fume improves bonding within the concrete and helps reduce permeability, it also combines with the calcium hydroxide produced in the hydration of portland cement to improve concrete durability.
As a microfiller, the extreme fineness of the silica fume allows it to fill the microscopic voids between cement particles.This greatly reduces permeability and improves the paste-to-aggregate bond of the resulting concrete compared to conventional concrete.

Dosage:
8% to 15% by weight of cement but as an addition not replacement.
8% to 10% High durability / Low permeability such as bridge decks or parking structures
10% to 15% High strength structural columns
10% max Flatwork
The amount required is related to silica fume dosage and the water-cementitious materials ratio. Silica fume is cementitious, but typically is added to and not replacing the existing portland cement.
The higher percentage of silica fume used, the higher the amount of super plasticizer needed - but mix can become "sticky". Consider replacing about 1/3 of the super plasticizer with a mid-range water reducer to improve workability

Uses:
Reduces concrete permeability
Increases concrete strength
Improves resistance to corrosion

PACKAGING: Packaged in 1ton bags.

APPLICABLE STANDARDS: LayFume meets or exceeds ASTM standards

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