

PCA-DSF

Densified Silica Fume Admixture for Concrete

DESCRIPTION:

PCA-DSF is a high performance, densified silica fume powder mineral admixture used to produce high performance concretes with special performance properties including increased strength, reduced permeability, improved abrasion resistance and increased corrosion resistance.

PCA-DSF is an extremely fine, highly reactive pozzolan which improves concrete performance by two mechanisms. First, the ultra-fine silica fume particles fill voids between the cement particles, physically reducing the concrete's permeability.

Secondly, as a highly reactive pozzolan, **PCA-DSF** chemically reacts with the calcium hydroxide present in the cement paste, forming the stronger calcium silica hydrate "glue". This results in improved paste to aggregate bond and higher concrete strengths.

USES:

PCA-DSF can be used to produce concretes with very low permeability and high abrasion and chemical resistance. Applications include parking garages, bridge decks, marine structures and any application where improved water tightness and reduced permeability are desired.

Due to its chemical and physical properties **PCA-DSF** can greatly enhance the strength performance as well as the bonding properties of concrete to which it is added. Higher strengths translate to greater design flexibility and more efficient use of space in completed structures.

ADVANTAGES:

- Dramatically reduces permeability
- Increases resistance to chemical attack
- Increases abrasion/erosion resistance
- Improves durability
- Increases compressive strength
- Increases flexural strength
- Increases bond strength

DOSAGE:

PCA-DSF dosage rate will vary depending on the strength increase, reduction in permeability and other physical properties desired. The recommended dosage range is from 5% to 15% by weight of cement.

SPECIFICATIONS:

Conforms to ASTM C-1240
AASHTO M-307

STORAGE:

PCA-DSF should be stored in a dry, protected area.

COMPATIBILITY:

PCA-DSF is fully effective and compatible in concrete containing all types of Portland cement, class C and F fly ash, calcium chloride, fibers and approved water-reducing, accelerating and retarding admixtures.

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SHELF LIFE:

Unlimited

PACKAGING:

50 (22.7 kg) pound bags, 25 (11.3 kg) pound bags or bulk.

TECHNICAL NOTE:

When using **PCA-DSF** it is strongly recommended that the practices in ACI 302 and ACI 308 be carefully followed, as silica fume modified concrete will typically exhibit very little if any surface bleed water.

The guidelines as set forth by The Silica Fume Association (703-444-2153) must be followed when using silica fume in concrete. These guidelines include the recommendation that the concrete batch size be limited to 63% of the concrete mixer's capacity, and that the concrete be mixed for a minimum of 100 revolutions at mixing speed after all materials are batched.

Please contact your Premiere Concrete Solutions Specialist for a pre-placement to discuss helpful batching, placement, finishing and curing procedures.

PCA-DSF does not contain any purposely added calcium chloride or other chloride based components. It will not promote or contribute to corrosion of reinforcing steel in concrete.

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