

CAC-g2MS

Densified Silica Fume

CAC-g2MS brand SILICA FUME is an ultrafine powder, and is light to dark grey in color. It is a co-product from the silicon or ferrosilicon industry and is rich in silicon-di-oxide (SiO₂).

When added in concrete CAC-g2MS improves the characteristics of concrete in two ways. Firstly due to its pozzolanic nature, chemically reacts with the Calcium Hydroxide leached out during the cement hydration leading to the increase in the amount of calcium silicate hydrate gel, thus improving the strength of the concrete dramatically.

Secondly, CAC-g2MS being an ultrafine material, physically fills the voids between cement particles making the concrete dense thus imparting water tightness & impermeability.

Uses:

- High Strength concrete
- High Performance Concrete
- Ready mix concrete
- Cast-in-situ concrete
- Precast concrete
- Dry & Wet Shotcrete
- Underwater concrete
- Concrete with low cement contents
- Self Compacting Concrete (SCC)

The reduced permeability of concrete produced with CAC-g2MS greatly limits the ingress of

water, chlorides, sulphates and other aggressive chemicals known for promoting reinforcing steel corrosion and other distresses in concrete. This makes CAC-g2MS an ideal product for use in basement structures, parking decks, bridge decks, marine structures and any construction that requires the protection provided by impermeable concrete.

Because of its pozzolanic and void-filling properties the addition of CAC-g2MS to concrete provides ultra high compressive strengths. This allows for design flexibility, resulting in reduced member size, increased span lengths and improved overall structural economics.

As a result of the preceding advantages, CAC-g2MS will improve performance in prestressed, precast and ready mixed concrete applications.

Directions for Use:

CAC-g2MS is recommended to be used with any compatible high range water reducing admixture to provide maximum workability while maintaining the desired low water/cement ratio.

Specifications:

CAC-g2MS complies to the following standards:

- ASTM C 1240 : 2005
- IS 15388 : 2003

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Advantages:

CAC-g2MS aids in achieving the following properties in concrete:

- Increased strength & density in concrete
- Prevents bleeding & segregation in concrete
- Low permeability & water tightness
- Resistance to Chlorides & Sulphates
- Resistance to chemical attack
- Better flexural strengths at all ages
- Reduced dosages of accelerators for Shotcrete
- Excellent freeze / thaw resistance
- Abrasion and Erosion resistance
- Corrosion protection
- Dramatically improved durability

Properties	ASTM C 1240	IS 15388	CAC-g2MS
SiO ₂ (%)	85 min	85 min	> 85
Loss of Ignition (%)	5 max	4 max	< 3.5
Moisture (%)	3 max	3 max	< 3
Bulk Density (kg/m ³)	550 - 700	550 - 700	550 - 700

Rate of Addition:

CAC-g2MS is recommended for use at an addition rate of 5 to 10% by weight of cementitious materials depending on the application. The exact amount for strength or durability requirements should be determined on case to case basis by conducting trials for the specific projects.

Recommended addition rates for various applications are :

Pumping Aid : 2 – 4%

High Strength : 5 – 10%

Chloride & Sulphate Resistance : 6 – 10%

Impermeability/Water tightness : 8 – 10%

Abrasion & Erosion Resistance : 8 – 12%

Acid & Chemical Resistance : 10– 15%

Alkali Silica Reaction : 10– 20%

Packaging:

CAC-g2MS is supplied in 25 Kg bags. Also available in 1000kg jumbo bags and in bulk.

Storage:

Store under dry & well ventilated covered area. out of direct sunlight and away from extreme temperatures. Shelf life is 12 months from the date of manufacture.



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Bureau Veritas Certification