

MasterLife[®] SF 100

Densified Silica Fume Admixture

Description

MasterLife SF 100 dry, densified silica fume admixture is formulated to produce extremely strong, durable concrete. MasterLife SF 100 silica fume admixture meets the requirements of ASTM C 1240, Standard Specification for Silica Fume used in Cementitious Mixtures or the CSA A3001:23 standard for use as a supplementary cementitious material.

Applications

Recommended for use in:

- Steel-reinforced concrete structures or wet shotcrete applications exposed to deicing or airborne salts
- Any construction project requiring the protection provided by highly durable, low permeability concrete
- Projects requiring high-strength/high-performance concrete
- Green Sense[®] Concrete

Features

- Added cohesiveness
- Reduced bleeding
- Enhanced performance

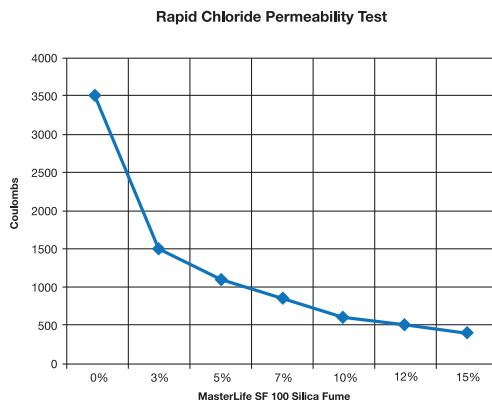
Benefits

- Increased concrete service life
- Increased strength
- Increased modulus of elasticity
- Reduced permeability thereby increasing durability
- Increased resistance to sulfate attack
- Increased resistance to alkali-silica reactivity

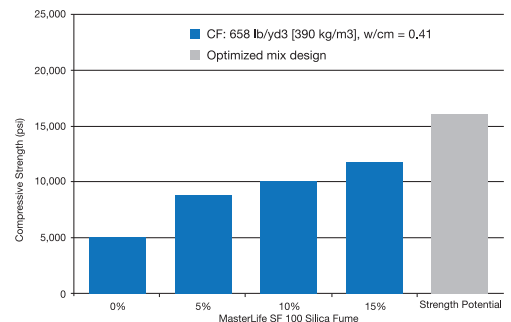
Performance Characteristics

Permeability: MasterLife SF 100 silica fume admixture is a micro-filling material that physically fills the voids between cement particles. MasterLife SF 100 silica fume admixture dramatically lowers permeability and reduces the size and number of capillaries that allow contaminants to enter the matrix.

Rapid Chloride Permeability



Typical Compressive Strengths



Compressive Strength: As a pozzolan, MasterLife SF 100 silica fume admixture reacts chemically within a cementitious matrix to increase the amount of calcium silicate hydrate (CSH) gel that is formed. The CSH gel is the bonding agent that holds the matrix of a cementitious mixture together in the hardened state. The additional CSH gel increases strength and decreases permeability.

Specific Gravity: The specific gravity of MasterLife SF 100 silica fume admixture is 2.2.

Guidelines for Use

Dosage: MasterLife SF 100 silica fume admixture is recommended for use in concrete and wet shotcrete applications at an addition dosage of 5-15% by mass of cement.

Dispensing and Mixing: For concrete and wet shotcrete, MasterLife SF 100 silica fume admixture is batched at the concrete production plant in a manner similar to that for cement or other cementitious materials such as fly ash. It may be batched in a central or truck mixer. Follow the procedures outlined in ASTM C 94/C 94M, Standard Specification for Ready-Mixed Concrete.

Degradable Bags: Degradable bags containing silica fume are intended to be added directly to a concrete mixing vessel without opening. The degradable bags are designed to disintegrate through the combination of wetting and grinding the paper during concrete mixing. In some instances, the degradable bags may fail to disintegrate as intended resulting in fragments of the bag on a concrete surface. This can occur in concrete mixtures with a very low water-cementitious materials ratio, mixtures with maximum sized coarse aggregate of 1/2 in. [13 mm] or less, mixtures with rounded or lightweight aggregates, and in pan mixers. As a precaution, Master Builders Solutions recommends performing a trial batch of the proposed mixture. If the bags do not disintegrate fully, then Master Builders Solutions recommends that bagged MasterLife SF 100 silica fume be added to the concrete batching process by opening the bag and safely adding the contents into the mixer. The bag should then be properly discarded. Contact your Master Builders Solutions representative for guidance.

Product Notes

Corrosivity – Non-Chloride, Non-Corrosive: MasterLife SF 100 silica fume admixture will neither initiate nor promote corrosion of reinforcing or prestressing steel embedded in concrete or of galvanized steel floor and roof systems. Neither calcium chloride nor other chloride-based ingredients are used in the manufacture of this silica fume.

Compatibility: MasterLife SF 100 silica fume admixture can be used with portland cements approved under ASTM, AASHTO or CRD specifications. It is compatible with most concrete admixtures, including all Master Builders Solutions admixtures. MasterLife SF 100 silica fume admixture is recommended for use with high-range water-reducing admixtures, such as the MasterGlenium® series, for maximum workability while maintaining a low water-cementitious materials ratio.

Storage and Handling

MasterLife SF 100 silica fume admixture stores, handles and dispenses similar to cement or fly ash. In bulk, MasterLife SF 100 silica fume admixture may be stored in a silo. Refer to the Silica Fume Association Users Manual for information on the appropriate set up for pumping and handling silica fume into silos. Packaged MasterLife SF 100 silica fume admixture must be stored in a dry area. MasterLife SF 100 silica fume admixture requires no special dispensing equipment.

Shelf Life: MasterLife SF 100 silica fume admixture has a minimum shelf life of 24 months. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use and dosage recommendations if the shelf life of MasterLife SF 100 silica fume admixture has been exceeded.

Packaging

MasterLife SF 100 silica fume admixture is available in 25 lb (11.34 kg) degradable bags, 2,000 lb (907 kg) bulk bags or by bulk delivery.

Related Documents

Safety Data Sheet: MasterLife SF 100 silica fume admixture, Silica Fume Association Users Manual.

Additional Information

For additional information on MasterLife SF 100 silica fume admixture or its use in developing concrete mixtures with special performance characteristics, contact your local sales representative.

Master Builders Solutions creates technologies for the construction industry inspiring people to build better. We are active in ~40 countries and operate 35 production sites with over 1,600 employees. We develop, produce, and market high-quality chemical admixtures, as well as adjacent core technologies, to master the challenges of today and support a decarbonized future. Our people are pivotal and pair leading technologies and a strong brand heritage to surpass our customers' expectations and drive continuous value creation.

Limited Warranty Notice

Master Builders Solutions Admixtures US, LLC ("Master Builders Solutions") warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS SOLUTIONS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders Solutions. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS SOLUTIONS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

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