

MasterLife[®] SF 100

Silica fume mineral admixture

DESCRIPTION

MasterLife SF 100 is a dry, compacted, silica fume mineral admixture formulated to produce concrete with special performance qualities. It improves the hardened characteristics of concrete in two main ways.

Firstly, **MasterLife SF 100** is a pozzolan which reacts chemically to increase the amount of calcium silicate hydrate gel formed, thus improving the strength and impermeability of the concrete. Secondly, **MasterLife SF 100** is an ultra-fine material that physically fills the voids between cement particles resulting in an extremely dense and impermeable concrete. **MasterLife SF 100** meets ASTM C1240 requirements.

RECOMMENDED USES

The reduced permeability of concrete produced with **MasterLife SF 100** greatly limits the ingress of water, chlorides, sulphates, and aggressive chemicals known for promoting reinforcing steel corrosion and other distress in the concrete. This makes **MasterLife SF 100** 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. It allows for design flexibility, resulting in reduced member size, increased span lengths, and improves overall structural economics which strengthen concrete. As a result of the preceding advantages, **MasterLife SF 100** will improve performance in wet and dry shotcrete, prestressed, precast, and ready-mixed concrete applications. When air entrainment is desired, an air-entraining admixture is recommended. Please consult your local Master Builders Solutions Technical Sales Representative. It is also recommended that **MasterLife SF 100** be used in conjunction with a high range, water-reducing admixture, such as **MasterPolyheed** or **MasterGlenium** admixtures for maximum workability while maintaining a low water-cementitious ratio.

ADVANTAGES

MasterLife SF 100 aids in the production of concrete with the following special qualities:

- Dramatically improved durability
- Uniformly high compressive strength
- Abrasion and erosion protection
- Better flexural strengths at all ages
- Low permeability
- Excellent freeze/thaw resistance

PACKAGING

MasterLife SF 100 is available in big bags of 950kg ± 3% (sold in kg and as per actual weight of silica fume in bag).

TYPICAL PROPERTIES*

Silicone dioxide ASTM C1240-14	>85%
Loss on ignition ASTM C311 C311M-13	<3%
Chloride content ASTM C114-13	<0.1%
Bulk density ASTM C1240	600-750kg/m ³

COMPATIBILITY

MasterLife SF 100 is compatible with all Portland Cements and in combination with Ground Granulated Blast Furnace Slag (GGBS) and Fly Ash (PFA).

RATE OF HARDENING

Setting time of concrete is influenced by the chemical and physical composition of the cement and/or cement type used to produce the concrete, temperature of the concrete, weather conditions, and the use of chemical admixtures. Trial mixes should be made with the job materials to determine the setting time of a specific mixture. **MasterLife SF 100** silica fume will not initiate or promote corrosion of reinforcing steel embedded in concrete, prestressed concrete or concrete placed on galvanized steel floor and roof systems. Neither calcium chloride nor any chloride based ingredients are used in the manufacture of **MasterLife SF 100** silica fume.

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DISPENSING

MasterLife SF 100 is batched at the ready-mix plant in a manner similar to cement or other cementitious materials such as fly ash and granulated slag.

Note: For directions on the proper use of **MasterLife SF 100** specific applications, contact your local Master Builders Solutions Technical Sales Representative.

DOSAGE

MasterLife SF 100 is recommended for use at an addition rate of 5 to 10% by weight of cement, depending on the amount of strength increase or impermeability desired. The exact amount for strength or durability requirements should be determined by trial batches using project materials.

STORAGE AND SHELF LIFE

MasterLife SF 100 can be kept for 12 months if stored in original packaging, in a cool dry place and protected against physical damage.

HEALTH AND SAFETY

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the Master Builders Solutions Material Safety Data Sheet (MSDS) from our office or our website.

QUALITY AND CARE

All products originating from Master Builders Solutions Dubai, UAE facility are manufactured under a management system independently certified to conform to the requirements of the quality, environmental and occupational health & safety standards ISO 9001, ISO 14001.

* Properties listed are based on laboratory controlled tests.

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STATEMENT OF RESPONSIBILITY

The technical information and application advice given in this Master Builders Solutions publication are based on the present state of our best scientific and practical knowledge. As the information herein is of a general nature, no assumption can be made as to a product's suitability for a particular use or application and no warranty as to its accuracy, reliability or completeness either expressed or implied is given other than those required by law. The user is responsible for checking the suitability of products for their intended use.

NOTE

Field service where provided does not constitute supervisory responsibility. Suggestions made by Master Builders Solutions either orally or in writing may be followed, modified or rejected by the owner, engineer or contractor since they, and not Master Builders Solutions, are responsible for carrying out procedures appropriate to a specific application.

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