MASTER® BUILDERS SOLUTIONS

MasterRoc® MS 675

Lubricating Aid, Viscosity Modifier and Strength Enhancer for Shotcrete and Concrete

Description

MasterRoc MS 675 is a liquid dispersion of nanometric colloidal silica, designed to improve the properties of shotcrete and concrete in both the plastic and hardened states. MasterRoc MS 675 product meets ASTM C 494/C 494M requirements for Type S, Specific Performance, admixtures.

Applications

MasterRoc MS 675 product is used for improving the physical and mechanical performance of pumped concrete, shotcrete and conventionally placed concrete.

Features

- Very low viscosity
- Normal setting characteristics
- Reduced bleed characteristics
- Reduced segregation, particularly in lean mixtures and high slump concrete mixtures

Benefits

- Enhanced workability and stability
- Improved pumpability, especially over long distances
- Improved sprayability of shotcrete, including a reduction of rebound
- Improved strength and durability of concrete mixtures
- Reduction in shrinkage of hardened concrete

Performance Characteristics

Technical Data

Typical values

Color	Clear
Viscosity*	7 cP (mPa.s)
Density*	75.0 lb/ft^3 (1.2 kg/L)
pH*	10.5
SiO_2 concentration	30 ± 1 %

@ 68 °F (20 °C)

Applications

Viscosity Modifier

Due to its ultrafine particle size, MasterRoc MS 675 product “completes” the grading curve within flowing concrete, self-consolidating concrete and shotcrete mixtures. This greatly improves the cohesiveness within the high flow mixtures and prevents segregation and bleeding. The inclusion of MasterRoc MS 675 product also improves the surface finish.

Strength Enhancer

Both the compressive and flexural strengths can be improved by optimizing the mixture and incorporating MasterRoc MS 675 product along with a polycarboxylate-based water-reducing admixture. Normally, a typical concrete mixture achieves a flexural strength that is about one-tenth of its compressive strength, while the optimized mixture can achieve an improved ratio.

Lubricating Aid

The inclusion of MasterRoc MS 675 product in pumped concrete and shotcrete offers improved pumpability and reduced pumping pressures, especially in mixtures with low cement content, lack of fines and poorly-graded aggregates.

Guidelines for Use

Dosage: The recommended dosage range of MasterRoc MS 675 product is 4 to 12 fl oz/cwt (260 to 780 mL/100 kg).

The dosage of MasterRoc MS 675 product will vary according to the quantity of fines within a mixture and the resultant rheology required for the application. Preliminary tests are recommended to determine the optimum dosage.

Please consult your local Master Builders Solutions technical representative for guidance, if dosages outside those recommended are required.

Dispensing and Mixing: MasterRoc MS 675 product should be incorporated in the mixing water or added to the mixture after the water has been dispersed. MasterRoc MS 675 product should not be added to the dry materials.

Product Notes

Compatibility: MasterRoc MS 675 product can be used with other Master Builders Solutions admixtures to achieve cost-effective customized performance. However, all admixtures should be dispensed separately to ensure complete distribution throughout the mixture. MasterRoc MS 675 product should not be used in conjunction with other admixtures unless specific test information is available.

Storage and Handling

Storage Temperature: MasterRoc MS 675 product should be stored within a temperature range of 40 °F and 95 °F (5 °C and 35 °C). Do not allow the product to freeze. Consult your local Master Builders Solutions technical representative before using any product that has frozen. Store under cover, out of direct sunlight and protect from extremes of temperature.

Safety: MasterRoc MS 675 product contains no hazardous materials requiring labeling. However, colloidal silica will irritate the eyes and the skin. Hence, standard precautions for handling chemical products should be observed: Avoid eye and skin contact and wear gloves and safety goggles. If contact occurs, rinse with plenty of water. In case of eye contact, seek medical advice.

Packaging

MasterRoc MS 675 product is available in bulk and packaged quantities. Because bulk shipping and packaging sizes vary by region, please contact your local Master Builders Solutions sales representative for more information.

Related Documents

Safety Data Sheets: MasterRoc MS 675 product.

Additional Information

For additional information on MasterRoc MS 675 product, contact your local sales representative.

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Utilizing worldwide resources, the Master Builders Solutions community of experts are passionate about providing solutions to challenges within all stages of construction, as well as the life cycle of a structure. At Master Builders Solutions we create sustainable solutions for construction around the globe.

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