

MasterRoc[®] MS 685

Lubricating Aid, VMA and Strength Enhancer for Concrete

Material Description

MasterRoc MS 685 is a liquid admixture based on a suspension of amorphous silica.

These ultra-fine particles start working as soon as they are incorporated in the mix. The texture of the slurry is similar to cement paste and creates a stable microscopic mineral.

This texture provides improved cohesion, lessens porosity and increases "compactness" of the mix.

Areas of Application

- Pump concrete / semi dry mixes
- Mixes exposed to high friction
- Concrete exposed to frequent wetting
- Concrete with fine architectural finish
- High performance concretes
- Sprayed concrete
- Injection mortars
- Self-compacting concrete
- Improved flexural strength

Characteristics and Benefits

The amorphous silica starts working in a pozzolanic manner as soon as it is incorporated in the cement-based mix and therefore gives texture to the paste.

This enhanced texture improves the whole rheology of the concrete mix (or mortar) and prevents migration of the water, therefore:

- Improves cohesion
- Reduces pump pressures
- Reduces the tendency for a mix to segregate
- Reduces porosity
- Improves the overall quality of the concrete
- Corrects a lack of fine elements within a grading curve.
- Improves surface finish

Packaging

1000 liter IBCs, in 205 liter drums and 25 liter containers

Technical Data

Color	Opalescent
Odor	No smell or taste

Density (20° C)	1.3 g/cm ³
Viscosity (cPS)	< 15
Solid content (wt%)	40
pH-value	9.4

Dosage

MasterRoc MS 685 should be used at a dosage of between:

By Volume - 0.25 to 2.0 liters per 100 kg of cement (binder)

By Mass - 0.325 to 2.6 kg per 100 kg of cement (binder)

The dosage will vary according to the quantity of fines within a mix and the resultant rheology required for the application.

Preliminary tests will help to find the optimum dosage.

Recommendations

MasterRoc MS 685 should be incorporated in the mixing water or added to the mix after the water has been dispersed. It should not be added to the dry materials.

Application Procedure

Viscosity Modifier

Due to its ultra-fine particle size MasterRoc MS 685 "completes" the grading curve within high flow and self-compacting concretes. This greatly improves the support within high flow mixes and prevents segregation and bleeding. The inclusion of MasterRoc MS 685 also improves the surface finish.

Strength Enhancer

By optimizing the mix and incorporating MasterRoc MS 685 along with a PCE based water reducer both the compressive and flexural strength can be improved. Normally, a concrete achieves a flexural strength that is 1/10th of its compressive strength whilst the optimized mix can achieve an improved ratio.

Lubricating Aid

By the inclusion of MasterRoc MS 685 in "extruded or slip-formed" precast concretes the surface friction is greatly reduced. Both, the force required to "initiate" travel and the force required to travel along the casting bed are typically



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reduced by 30%. This greater efficiency along with a reduction in the cement content, as the air-entrainer previously incorporated for lubrication is removed, shows significant reduction in the cost of extruded/slip-formed precast units.

Storage

MasterRoc MS 685 should be stored in a place where temperature does not drop below +5°C. If product has frozen, thaw at +3°C and agitate until completely reconstituted. Store under cover, out of direct sunlight and protect from extremes of temperature. Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging.

For specific storage advice, consult Master Builders Solutions Construction Chemicals Technical Services Department.

Shelf-life

Up to 18 months if stored according to manufacturer's instruction in unopened containers.

Precautions

Avoid contact with eyes and prolonged contact with skin. If contact occurs, wash thoroughly with water, and seek medical advice. For further information refer to the product Material Safety Data Sheet.

Disclaimer

The information given here is true, represents our best knowledge and is based not only on laboratory work but also on field experience. However, because of numerous factors affecting results, we offer this information without guarantee and no patent liability is assumed. For additional information or questions, please contact your local representative.

Headquarters:

Master Builders Solutions Deutschland GmbH
Glücksteinallee 43-45
68163 Mannheim
Germany

ugc@masterbuilders.com

For more information, visit us: <https://ugc.master-builders-solutions.com/en/>

