

MasterRoc[®] MP 680

Blast furnace slag based microfine cement for rock and soil injection

Description

MasterRoc MP 680 is a well-graded microfine cement milled based on granulated blast furnace slag. MasterRoc MP 680 microfine cement has a Blaine value of 680 m²/kg and has a slag content of more than 80%. Due to the small particle size and a specially adapted admixture system, MasterRoc MP 680 microfine cement can penetrate well into tight joints, fissures and pores spaces, and can provide a water-tight grouted rock or soil mass much more effectively than ordinary Portland cement systems. MasterRoc MP 680 microfine cement shows high resistance to aggressive water-soluble media such as sulphates, chlorides, acids, etc.

Applications

MasterRoc MP 680 microfine cement is recommended for use in soil and rock injections for:

- Pre- and post-excavation injections in tunnels, caverns, and mines
- Water ingress reduction in underground structures
- Ground stabilization and ground water sealing
- Contact injection
- Geotechnical grouting and ground improvement

Features

- Fine particle size
- Durable
- Cost effective
- Non-hazardous
- Standard cement injection equipment can be used

Benefits

- Excellent penetration in tight joints, fissures and pore spaces
- Improved water tightness following proper application
- Better working environment
- Improved grouting efficiency with less waste

Performance Characteristics

Technical Data

Fineness (Blaine)	> 680 m ² /kg
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Particle Size Distribution

< 40 micron	100%
< 30 micron	99%
< 20 micron	97%
< 15 micron	93%
< 10 micron	79%
< 5 micron	47%

Setting Time

MasterRoc MP 680 microfine cement has the same setting time as normal microfine cements with the initial set in > 4 hours.

Injection Grout Properties

Relate to a mix containing 1.5% (by mass of cementitious materials) Master Builders Solutions high range water reducing admixture:

Mud balance	12.5 lb/gal (1.48 - 1.50 kg/l)
Water-cement ratio	1.0
Flow cone	32s - 34s
Bleeding (maximum)	2%

Guidelines for Use

Application Procedure: MasterRoc MP 680 microfine cement should always be used with a Master Builders Solutions High Range Water Reducing admixture (HRWR - MasterGlenium or MasterRheobuild at 0.6 – 2 % of the cement by mass). Water-cement ratio (by mass) should normally be between 0.6 - 1.0.

Mixing:

- Fill the mixer with water
- Add MasterRoc MP 680 microfine cement while running the mixer
- Mix for 2 minutes
- Add the HRWR and mix for one minute
- Transfer the mix to agitator

It is very important to use an efficient mixer. Colloidal mixers are preferred and give the best results for complete mixing.

Minimum speed for colloidal mixers is 1,500 rpm.

Do not over mix. Mixing longer than recommended may cause the mix temperature to increase and set in the pump and hoses.

Pot life: The mix should be kept under constant agitation prior to injection. The mix has a pot life of more than 90 minutes.

Injection: High-pressure piston pumps are normally used to pump the mix into the rock.

Hardening: MasterRoc MP 680 microfine cement has setting times comparable to regular Portland and other microfine cements. It will set sufficiently to allow drilling in less than 24 hours.

Storage and Handling

Shelf Life: MasterRoc MP 680 microfine cement has a minimum shelf life of 9 months when stored in the original unopened bags in ventilated dry areas.

Safety: Direct contact between bare skin and MasterRoc MP 680 microfine cement should be avoided as it may cause irritation or burns. If contact does occur, flush the affected area with copious amounts of clean water. In case of eye contact, seek immediate medical advice. For further information please refer to the Safety Data Sheet or contact your local sales representative.

Packaging

MasterRoc MP 680 microfine cement is supplied in 44 lb (20 kg) plastic bags and 2200 lb (1000 kg) bulk bags.

Related Documents

Safety Data Sheets: MasterRoc MP 680 microfine cement

Additional Information

For additional information on MasterRoc MP 680 microfine cement, please 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

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