

MasterRoc® MP 650

Microfine portland cement for rock and soil injection

Formerly RHEOCEM 650*

Description

MasterRoc MP 650 microfine portland cement is designed for use in rock and soil injection. MasterRoc MP 650 has a small particle size making it particularly well-suited for penetration into tight joints, fissures and pore spaces. This superior penetration provides a water-tight grouted rock or soil mass much more effectively than ordinary portland cement systems.

Applications

Recommended for use in rock injection for:

- Tunnels, caverns and mines for pre- and post-excavation injection
- Ground water sealing and ground stabilization
- Soil injection
- Pre-packed injection
- Contact injection

Features

- Fast setting time
- Durable
- Cost effective
- Fine particle size
- Non-hazardous

Benefits

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

Performance Characteristics

MasterRoc MP 650 is a well-graded cement milled from pure portland cement clinker with a Blaine value of 6,500 cm²/g.

Technical Data

Fineness (Blaine)	>6,250 cm ² /g
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Particle Size Distribution

<40 microns	100 %
<30 microns	98 %
<20 microns	97 %
<15 microns	94 %
<10 microns	77 %
< 5 microns	44 %
< 2 microns	16 %

Setting Times

The setting times at a 1:1 water-cement ratio (by mass) and at 68 °F (20 °C) are as follows:

Initial Set	60 - 120 min (measured by vicat needle)
Final Set	120 - 150 min (measured by vicat needle)

Injection Grout Properties

Relate to a mix containing 1.5% (by mass of cementitious) MasterRheobuild® 1000 admixture:

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

Guidelines for Use

Application Procedure: MasterRoc MP 650 microfine cement should always be used with MasterRheobuild 1000 water reducing admixture (1.0 - 3.0% of cement by mass). Water-cement ratio (by mass) should normally be between 0.5 - 1.0.

Mixing:

- Fill the mixer with water
- Add cement
- Mix for two (2) minutes
- Add MasterRheobuild 1000 and mix for one (1) minute
- Transfer 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: 1500 rpm.

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

Pot Life: The mix should be kept under constant agitation prior to injection. Do not keep grout in agitator longer than 30 to 40 minutes.

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

The grout should be injected within 30 to 40 minutes after mixing to ensure that it keeps penetrating into the fissures. Longer open times can be achieved by using MasterSet® DELVO.

Hardening: MasterRoc MP 650 microfine cement has set times comparable to that of ordinary portland cement and other fine cements, and it will harden and can be drilled in less than 24 hours.

Storage and Handling

Shelf Life: MasterRoc MP 650 microfine cement has a shelf life of 6 months when stored in original closed bags in ventilated dry areas.

Safety: Direct contact with bare skin and MasterRoc MP 650 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 650 microfine cement is supplied in 44.1lb (20 kg) plastic bags and 2,205 lb (1,000 kg) bulk bags.

Related Documents

Safety Data Sheets: MasterRoc MP 650 microfine cement

Additional Information

For additional information on MasterRoc MP 650 microfine cement, consult your local sales representative.

The Admixture Systems business of BASF's Construction Chemicals division is the leading provider of solutions that improve placement, pumping, finishing, appearance and performance characteristics of specialty concrete used in the ready-mixed, precast, manufactured concrete products, underground construction and paving markets. For over 100 years we have offered reliable products and innovative technologies, and through the Master Builders Solutions brand, we are connected globally with experts from many fields to provide sustainable solutions for the construction industry.

Limited Warranty Notice

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* RHEOCEM 650 OP became MasterRoc MP 650 under the Master Builders Solutions brand, effective October 1, 2013.