

3	03 64 00	Injection Grouting
31	31 01 70	Maintenance of Tunneling and Mining
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MasterRoc[®] MP 650

Microfine portland cement for rock and soil injection

Description

MasterRoc MP 650 is a well-graded microfine cement milled from pure portland cement clinker and has a Blaine value of 650 m²/kg. MasterRoc MP 650 microfine cement 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 soil and rock injection for:

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

Technical Data

Fineness (Blaine)	> 625 m ² /kg
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Particle Size Distribution

< 40 microns	100%
< 30 microns	99%
< 20 microns	97%
< 15 microns	93%
< 10 microns	80%
< 5 microns	50%
< 2 microns	23%
d ₉₅	16 microns
d ₅₀	5 microns
d ₂₅	2 microns

Setting Time

The setting times (measured by Vicat needle) at a water-cement ratio of 1.0 (by mass) and at 68 °F (20 °C) are as follows:

Initial Set	60 - 120 min.
Final Set	120 - 150 min.

Injection Grout Properties

Relate to a mix containing 1.5% (by mass of cementitious materials) 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 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 2 minutes
- Add MasterRheobuild 1000 admixture and mix for one 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 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. Do not keep mix in agitator longer than 30 to 40 minutes.

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

The mix 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 admixture.

Hardening: MasterRoc MP 650 microfine cement will set sufficiently in 2 to 2-1/2 hours to allow drilling to commence for control or blast holes.

Storage and Handling

Shelf Life: MasterRoc MP 650 microfine cement has a shelf life of 9 months when stored in original closed bags in ventilated dry areas.

Safety: Direct contact between 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.

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.

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.

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