

MasterRoc[®] SLF 670

Concentrated, Biodegradable, High Performance, Highly Stable Foaming Agent for Tunnel Boring Machines (TBM)

Description

MasterRoc SLF 670 is a concentrated, biodegradable, high-performance and highly stable foaming agent, specifically designed to improve the performance and control of the soil through the screw conveyor under the toughest conditions. MasterRoc SLF 670 foaming agent is ideal for heterogeneous grounds with variable ranges of permeability.

Applications

The main application of MasterRoc SLF 670 foaming agent is in the TBM soft ground tunneling. The product is specifically designed to treat silty to sandy soils. MasterRoc SLF 670 foaming agent can maintain chemical homogeneity and stability at low temperatures and also in frozen soils. MasterRoc SLF 670 foaming agent can create a highly stable fine foam that holds the face pressure and maintains the rheology of the excavated ground longer than the conventional foaming agents. The foam generated from MasterRoc SLF 670 foaming agent can be injected in front of the cutterhead, into the TBM working chamber or in the screw conveyor.

Features

- Remains stable in temperatures as low as 23 °F (-5 °C)
- High foaming capacity
- Generates fine, uniform, and stable foams
- Creates plastic deformation properties in the soil
- Lowers inner friction and abrasiveness of the soil
- Helps obtain desired soil rheology with decreased foam injection ratio (FIR) values

Benefits

- Suitable for a wide range of tunneling environments
- Improves face support pressure control and increases face stabilities
- Improves soil behavior and reduces soil permeability
- Improves TBM excavation cycle time and quality
- Reduces risk of surface settlement
- Reduces soil blockage and promotes easier mucking
- Reduces cutterhead and screw conveyor wear
- Reduces foam consumption
- Reduces logistic complexities

Performance Characteristics

Technical data

Form	Liquid
Color	Transparent
Density [at 68 °F (20 °C)]	61.5 lb/ft ³ (0.985 g/cm ³)

Guidelines for Use

Application Procedure: MasterRoc SLF 670 foaming agent needs to be diluted with water at the rate of 27% by mass or at the ratio of 3:8 (3 parts of MasterRoc SLF 670 foaming agent and 8 parts of water) by volume, before being applied on TBM. Please contact your local Master Builders Solutions representative for details.

Foam Equipment and Dosing System: Diluted MasterRoc SLF 670 foaming agent can be used with the standard foam generators installed on earth pressure balance (EPB) machines. The foam generated from the diluted MasterRoc SLF 670 foaming agent can be injected at the cutterhead, into the working chamber, or in the screw conveyor.

Do not mix MasterRoc SLF 670 foaming agent with any other soil conditioning additives as this may cause immediate gel formation. If several soil conditioning products are used on the TBM, it is recommended to reserve a specific transfer or dosing pump for MasterRoc SLF 670 foaming agent. If the transfer or dosing pump is being used for more than one product, the pump should be thoroughly cleaned with water before switching to MasterRoc SLF 670 foaming agent.

Dosage: The foam recipe, foam expansion rate (FER), and foam injection rate of MasterRoc SLF 670 foaming agent will depend on the conditions of the soil encountered. It is always recommended to conduct proper soil conditioning trials prior to application to determine best dosage rate and performance, which are specific for every project. Please contact your local Master Builders Solutions sales representative for details and technical support.

Storage and Handling

Storage Temperature and Shelf Life: The storage temperature of MasterRoc SLF 670 foaming agent is between 23 °F and 105 °F (-5 °C and 40 °C). Please note that at temperatures below 32 °F (0 °C), MasterRoc SLF 670 foaming agent might appear slightly turbid. This will not negatively affect the performance of the product once it is remixed and homogenized. However, do not allow MasterRoc SLF 670 foaming agent to freeze. Please contact your local Master Builders Solutions representative prior to the use of the product that has become frozen.

If stored in the original and tightly closed containers, MasterRoc SLF 670 foaming agent will have a shelf life of 12 months.

Safety: Standard precautions for handling chemical products should be observed. Avoid eye and skin contact and wear hand gloves and safety goggles. If contact occurs, rinse with plenty of water. In case of eye contact, seek medical advice. For further information, refer to the Safety Data Sheet.

Packaging

MasterRoc SLF 670 foaming agent is available in 250 gal (945 L) totes.

Related Documents

Safety Data Sheets: MasterRoc SLF 670 foaming agent

Additional Information

For additional information on the MasterRoc SLF 670 foaming agent, 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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