

MasterRoc[®] SLF 543

High performance foaming agent polymer modified for difficult cohesive grounds with tendency for clogging, readily biodegradable for Tunnel Boring Machines (TBM) applications

Material Description

MasterRoc SLF 543 is a high-performance foaming agent specially designed to improve the performance and control of silt to sandy soils with clay and clogging issues.

It has an improved foam stability and is based on biodegradable raw materials.

Improved foam properties are crucial in ensuring proper control of the earth pressure, reducing the risk of additional settlement at the surface.

The special selected anti-clogging polymer effectively reduces the clogging and adhesion potential of clay-containing soils on the TBM.

MasterRoc SLF 543 is suitable for use in a wide range of temperatures.

Areas of Application

MasterRoc SLF 543 creates a highly stable fine foam to hold the face pressure and maintain the rheology of the excavated ground longer than conventional foaming agents.

MasterRoc SLF 543 can be used with the standard foam generators installed on EPB machines. It can be injected at the cutterhead, into the working chamber and in the screw conveyor.

Characteristics and Benefits

Operational

- Due to the high foaming capacity, it will be possible to work with high FER values avoiding the collapse of the foam, compared to standard foaming agents
- You will work with lower FIR values to obtain the desired soil rheology, compared to standard foaming agents
- Improved face excavation support pressure and control
- Improved TBM excavation cycle's time, quality, and cost
- Facilitated muck extraction from tunnel and from the muck pit area
- Improved overall tunnel performance
- Reduced tunnel excavation time
- Reduced TBM maintenance costs
- Optimized muck logistics outside job site
- Minimized over excavation and contractual disputes
- Reduced risk of surface settlement
- Reduction of clogging and adhesion effects on the cutterhead

Technical

- Eliminates risk of clogging and adhesion to metal parts of the TBM
- Reduced stickiness of soils with high fines contents (i.e. <0.063 mm), which would lead otherwise to clogging, blockage problems
- No separation at low temperatures
- Higher foam stability at low temperatures
- Great performance also at higher temperatures
- Improved soil behavior
- Reduced soil permeability
- Creation of plastic deformation properties in the soil, which increases face stability
- Lower inner friction and lower abrasiveness of the soil at the cutterhead and shield

Packaging

MasterRoc SLF 543 is available in standard 1000 Liters IBCs and bulk.

Technical Data

Form	Liquid
Color	Transparent
Density (g/cm ³ at 20°C)	1.05

MasterRoc SLF 543 exhibits:

- High foamability
- High stability
- Very high Half Life Drainage Time (HLT)
- Very high mechanical resistance and strength

Application Procedure

MasterRoc SLF 543 is used as aqueous solution with a typical 1 % - 3 % concentration. If the consistency of the muck needs to be reduced, MasterRoc SWA and SLP polymers can be used in combination with MasterRoc SLF 543. For the first use and combination with other soil conditioning agents, please contact your local Master Builders Solutions representative.



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Dosing System

MasterRoc SLF 543 can be used with the standard TBM dosing and foaming equipment.

Storage

MasterRoc SLF 543 can be stored between 5°C and 40°C. At temperatures below 5 °C the product can become slightly turbid, but this doesn't affect the performance because it remains homogeneous. Do not allow the product to freeze. If stored in original tightly closed containers, it will have a shelf life of 12 months.

Precautions

Standard precautions for handling chemical products should be followed. Avoid eye and skin contact and wear rubber gloves and safety glasses. For further information, refer to the Material Safety Data Sheet which you can obtain from our local Master Builders Solutions representative.

Ecological Information

MasterRoc SLF 543 is eco-friendly and highly biodegradable as per international standards. Please consult Master Builders Solutions Material Safety Data Sheet.

Product Disposal Information

Deposition of excavated material conditioned with MasterRoc SLF 543 on a landfill for inert materials as per the Council Directive 1999/31/EC dated 26.04.1999 on the landfill of waste (OJ L 182, 16.07.1999) shall be possible in any case.

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.

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