

# MasterRoc<sup>®</sup> ACP I 49

## High-performance, highly stable anti-clay soil conditioning polymer for Tunnel Boring Machines (TBM)

### Description

MasterRoc ACP I 49 is a liquid anti-clay polymer specially designed for use in a wide variety of ground conditions from highly cohesive and adhesive soils (such as marl, silts, and clays that contain fine particles) to silty and sandy soils. With its highly stable foam properties, MasterRoc ACP I 49 anti-clay polymer can improve the performance and control of the soil through the screw conveyor under the toughest conditions.

### Applications

MasterRoc ACP I 49 anti-clay polymer creates a highly stable foam and can be used with the standard foam generators installed on Earth Pressure Balance (EPB) machines to reduce the clogging and adhesion potential of clayey soils, and to hold the face pressure and maintain the rheology of the excavated soils.

### Features

- Generates fine, uniform and stable foam bubbles
- Improves soil behavior and reduces soil permeability
- Creates plastic deformation properties in the soil
- Lowers inner friction and abrasiveness of the soil at the cutterhead
- Reduces clogging and adhesion on the cutterhead

### Benefits

- Provides controlled support pressures
- Increases face stability
- Reduces risk of surface settlement
- Reduces soil blockage and promotes easier mucking
- Reduces cutterhead torque and increases TBM advancement speed

### Performance Characteristics

#### Technical Data

Form	Liquid
Color	Dark Brown
Density (77 °F/25 °C)	63.1 lb/ft <sup>3</sup> (1.01 g/cm <sup>3</sup> )
pH (73 °F/23 °C)	7.5

### Guidelines for Use

**Application Procedure:** MasterRoc ACP I 49 anti-clay polymer can be used with the standard foam generators installed on earth pressure balance machines. The foam generated from MasterRoc ACP I 49 anti-clay polymer can be injected at the cutterhead, into the working chamber, or onto the screw conveyor. The foam recipe, foam expansion rate, and foam injection rate will depend on conditions of the soil encountered. When injected by a foam generator, the typical foam expansion ratio (FER) is between 8 and 20, and the foam injection ratio (FIR) is between 30 and 80.

**Dosage:** MasterRoc ACP I 49 anti-clay polymer is typically used as an aqueous solution with a 1% to 3% concentration. If the consistency of the muck needs to be reduced, MasterRoc SWA and MasterRoc SLP polymers can be used in combination with MasterRoc ACP I 49 anti-clay polymer in order to adjust the properties of the excavated soil. For the first use and combination with other soil conditioning agents,



please contact your local Master Builders Solutions representative.

**Foam Equipment and Dosing System:** MasterRoc ACP I 49 anti-clay polymer can be used with the standard TBM dosing and foaming equipment.

Do not mix MasterRoc ACP I 49 anti-clay polymer 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 ACP I 49 anti-clay polymer. 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 ACP I 49 anti-clay polymer.

## Storage and Handling

**Storage Temperature and Shelf Life:** The storage temperature of MasterRoc ACP I 49 anti-clay polymer is between 40 °F and 105 °F (5 °C and 40 °C). If stored in the original and tightly closed containers, MasterRoc ACP I 49 anti-clay polymer will have a shelf life of 12 months. Do not allow the product to freeze. Consult your local sales representative before using any product that has become frozen.

**Safety:** Standard precautions for handling chemical products should be observed. Avoid eye and skin contact and wear 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 ACP I 49 anti-clay polymer is available in 275-gallon (1041 L) totes, and 5-gallon (18.9 L) pails. Bulk delivery is available upon request.

## Related Documents

Safety Data Sheets: MasterRoc ACP I 49 anti-clay polymer

## Additional Information

For additional information on MasterRoc ACP I 49 anti-clay polymer, 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

Master Builders Solutions warrants this product to be free from manufacturing defects and to meet the technical properties on the current Technical Data Guide, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. MASTER BUILDERS SOLUTIONS MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of Master Builders Solutions. Any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. MASTER BUILDERS SOLUTIONS WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

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