

MasterRoc[®] BA 110

High-Performance Bentonite for Annular Grout Mixes for Tunnel Boring Machines (TBM)

Description

MasterRoc BA 110 is a high yield, untreated and organic-free bentonite designed for use in the annular grouts that are injected behind the tunnel segments in TBM projects. Its special characteristics in enhancing viscosity, gel strength, thixotropy, and water retention make the product ideal for controlling the segregation, bleeding, and permeability of the annular grouts.

Applications

MasterRoc BA 110 product is recommended for TBM projects where high stability of the annular grouts is required. MasterRoc BA 110 product can be used both in fresh water and saltwater grounds.

Features

- Chemically stable
- Contaminant free
- Mixes quickly to achieve the required viscosity
- Excellent water retention

Benefits

- Reduces bleeding and segregation
- Ensures high level of lubrication and reduced permeability of the annular grouts
- Has the ability to cool metal parts of the operating machines

Performance Characteristics

Technical data (Typical)

Form	Powder
Color	Brownish
Particle size (ACC TP-1015)	Min. 70% passing No. 200 (75 microns) sieve
Swell index (ASTM D5890)	28 mL/2g
Specific gravity	156 lb/ft ³ (2.5 g/cm ³)
Bulk density (ACC TP-1005)	
Non-compacted	53 lb/ft ³ (0.85 g/cm ³)
Compacted	72 lb/ft ³ (1.15 g/cm ³)
Moisture (ACC TP-2006)	9.3%
Grit (<75 microns)	3.0% (ACC TP-2004, 4.0% Max)
Plate Water Absorption	776.6%

Guidelines for Use

Dosage and Application Procedure: MasterRoc BA 110 product can be used in the range of 60 - 75 lb/yd³ (35 - 45 kg/m³) of annular grout for TBM applications. Actual dosage rate of MasterRoc BA 110 product may vary, depending on the ground characteristics and the specific viscosity requirement for the applications. Lab testing prior to the application is highly recommended in order to optimize the mix design of the annular grout. With the above recommended dosage range, performance characteristics of the annular grout mix are expected to be in the following ranges:

Bleeding	<5% at 24 h
Marsh Cone viscosity	30 - 45 s at 1 h

To ensure proper mixing with cement and admixtures, it is recommended that MasterRoc BA 110 product be pre-hydrated 4 hours before using and to ensure proper hydration of MasterRoc BA 110 product, it is necessary to impart enough turbulence or shear during mixing.

Storage and Handling

Storage Temperature and Shelf Life: MasterRoc BA 110 product must be stored in the original packaging in a clean, dry area and must be protected from exposure to moisture. A loss of rheological and filtrate properties may result if the product is not stored as recommended. When properly stored, MasterRoc BA 110 product has a minimum shelf life of 12 months.

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 BA 110 product is supplied in 2000 lb (907 kg) and 3800 lb (1724 kg) supersacks, or in bulk.

Related Documents

Safety Data Sheets: MasterRoc BA 110 product

Additional Information

For additional information on the MasterRoc BA 110 product, contact your local sales representative.

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