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Shotcrete

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**Shotcrete Soil Slope
Stabilization**

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**Shotcrete Rock Slope
Stabilization**

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31 74 19

Shotcrete Tunnel Lining

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SOLUTIONS

MasterRoc[®] SA I 67

Alkali-free, Liquid High-Performance Set Accelerator for Sprayed Concrete

Description

MasterRoc SA I 67 is a high-performance, alkali-free shotcrete accelerator designed for use in the wet-mix

shotcrete application process.

This liquid admixture allows adjustable dosage to achieve the desired setting and

hardening times, offering flexibility in various applications.

Applications

Recommended for use in:

- Temporary and permanent ground support in tunneling and mining operations
- Slope stabilization
- Acceleration of cementitious grouts, such as annulus grout in TBM tunneling, cement grout for injections, and cellular concrete for backfill operations
- Other concrete or cementitious grout applications requiring high early strength, high final strength, and thick layer application in a single process

Features

- Fast-setting properties
- Continuous strength development at both early and later stages
- Low dust generation and minimal rebound during shotcrete application
- Non-aggressive composition
- Alkali-free and chloride-free formulation

Benefits

- Promotes rapid work progress
- Facilitates thick concrete lining construction in a single sequence
- Ensures early-age strength development and long-term durability
- Improves the working environment and enhances worker safety

Performance Characteristics

Technical data

Form	Suspension
Color	Beige to white
Density	1.47 ± 0.03 g/mL
pH	2.7 ± 0.5
Viscosity *	approximately 750 cP (mPa.s)
Thermal stability	41 °F to 95 °F (5 °C to 35 °C)
Chloride content	<0.1%
Na ₂ O _e	<1%

* Brookfield, at 68 °F (20 °C). Viscosity is dependent on the degree of product agitation and temperature. Typical variation ±40%. Suspensions



Guidelines for Use

Dosage: The dosage of MasterRoc SA 167 accelerator depends on the water-cement ratio (w/cm), the reactivity of the cement, and the temperature conditions (concrete, ambient air, and substrate). The dosage also depends on the required layer thickness, setting time, and early strength development.

The dosage of MasterRoc SA 167 accelerator normally ranges from 3% to 10% of the binder weight. Overdosing (>10%) may result in decreased final strength. In case an excessive dosage is needed, the impact on the strength shall be evaluated.

Concrete mixes: When MasterRoc SA 167 accelerator is used for wet mix spraying, the water-cement ratio (w/cm) should be below 0.5, and preferably below 0.45. When targeting extremely high-early strength, the w/cm should be 0.40 or lower. In general, a low w/cm provides faster setting, higher early strength, better durability, and lower accelerator dosage. Low w/cm also enables thicker layers of concrete to be sprayed overhead.

Dispensing and Mixing: MasterRoc SA 167 accelerator is added at the nozzle. It is essential to have a constant and accurate dosage of MasterRoc SA 167 accelerator in the concrete stream.

To ensure quality sprayed concrete, please follow the pump selection guidelines below:

Application procedure:

The substrate should be clean and free from loose particles, and preferably damp. It is recommended to use only fresh cement in the concrete mix because the age of the cement may have negative impacts on the setting characteristics of the mix.

Shotcrete accelerators can be sensitive to the type of cement and are also influenced by mix design. With some types of cement, the setting characteristics can be slow. We recommend the use of reactive types of cement. Testing of system performance beforehand is highly recommended.

MasterRoc SA 167 accelerator works well with composite cement types (blended cement, fly ash, slag, etc.). In all cases, preliminary tests on the set time and the 24-hour strength development are highly recommended.

Cleaning of the dosing pump: After the use of MasterRoc SA 167 accelerator, the dosing pump and other parts of the system must be thoroughly cleaned with plenty of water. Failure to do this promotes blockages in the dosing system. Make sure that all operators involved in testing and application are fully informed.

Product Notes

Compatibility: MasterRoc SA 167 accelerator can be interchanged with most of Master Builders Solutions alkali-free accelerators. For advice, please contact your local sales representative.

Do not mix or interchange MasterRoc SA 167 accelerator with any type of accelerator produced by another manufacturer, as this can cause immediate clogging of dosing pumps and hoses.

Storage and Handling

Storage: MasterRoc SA 167 accelerator should be stored at a temperature range of 40 °F to 95 °F (5 °C to 35 °C). The optimum temperature of storage and performance is 68 °F (20 °C). Please contact your local sales representative prior to the use of any product that is frozen.

MasterRoc SA 167 accelerator must be kept in closed containers made of plastic, glass fiber, or stainless steel. Do not store in normal steel containers as this could cause corrosion which might affect the performance of the product. Storage containers must be tightly closed at all times to avoid contact with air.

Storage in bulk tanks requires the use of agitation and/or circulation systems.

Fully agitate MasterRoc SA 167 accelerator before use after prolonged storage. Mechanical stirring or re-circulation pumping is recommended to agitate the admixture.

Performance testing should always be carried out before the use of MasterRoc SA 167 accelerator after prolonged storage.

Shelf Life: If stored in tightly closed original containers under the above conditions, MasterRoc SA 167 accelerator has a shelf life of 6 months. Periodical remixing can extend the shelf life further. Please contact your local Master Builders Solutions representative prior to the use of any product that has been frozen.

Safety: Avoid eye and skin contact and wear rubber gloves and safety glasses. If contact occurs, rinse with plenty of water. In case of eye contact, seek medical advice immediately. For further information, refer to the Safety Data Sheet for MasterRoc SA 167 Accelerator.

Packaging

MasterRoc SA 167 accelerator is supplied in IBC totes, drums, and by bulk delivery upon request.

Related Documents

Safety Data Sheet: MasterRoc SA 167 Accelerator.

Additional Information

Contact your local sales representative for additional information on MasterRoc RBA 382 resin.

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

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