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MasterRoc[®] SA 540

Alkali-Free, Powdered, High-Performance Set Accelerator for Dry-Mix Shotcrete

Description

MasterRoc SA 540 admixture is a high-performance, alkali-free set accelerator for use in the dry-mix shotcrete process. It is a powder additive whose dosage can be adjusted to achieve the desired setting and hardening times.

Applications

Recommended for use in:

- Temporary and permanent ground support in tunneling and mining operations
- Slope stabilization
- Concrete repairs

Features

- Ability to construct thick sprayed concrete linings (4 to 5 in. (100 to 150 mm)) during one construction sequence
- Fast setting
- Unique and advanced formulation

Benefits

- Allows rapid work progress
- Low rebound (when concrete is sprayed at the correct nozzle angle and distance)
- Unique and advanced formulation

Performance Characteristics

Technical Data

Form	White Powder
Bulk Density	46.8 – 62.4 lb/ft ³ (750 – 1000 kg/m ³)
pH (1% solution, 77 °F (25 °C))	2 – 5
Chloride content	<0.1%

Guidelines for Use

Dosage: The dosage of MasterRoc SA 540 admixture depends on the reactivity of the cement and the temperatures of concrete, ambient air and the substrate. The dosage also depends on the required layer thickness, setting time and early-strength requirements.

The dosage of MasterRoc SA 540 admixture normally ranges from 2% to 6% of the binder weight. Overdosing (> 10%) may result in decreased final strength. Field trials are recommended prior to use.



Product Notes

MasterRoc SA 540 admixture can be sensitive to the type of cement. It is recommended that ASTM Type I or Type III (CSA A300I Type GU or Type HE) cements are used in the dry-mix shotcrete mixtures, as against blended or sulfate-resistant cements that could result in slower setting times. It is also recommended that only fresh cement is used as the age of the cement could have a negative impact on the setting characteristics of the shotcrete mixtures.

It is strongly recommended that preliminary tests are conducted with the cements planned for use in the project to verify the setting time and the 24-hour strength of the shotcrete mixtures. The minimum cement content recommended with the use of MasterRoc SA 540 admixture is 600 lb/yd³ (350 kg/m³). The preferred cement content is 675 lb/yd³ (400 kg/m³).

Mixing and Placing: MasterRoc SA 540 admixture is added to the shotcrete mixture immediately prior to the spray.

The substrate should be clean and free from loose particles, and preferably damp.

Storage and Handling

Storage: MasterRoc SA 540 admixture should be stored under dry conditions without direct sunlight, and at a temperature range of 40 °F to 95 °F (5 °C to 35 °C).

Performance testing should always be carried out prior to the use of MasterRoc SA 540 admixture after prolonged storage.

Shelf Life: If stored under the above conditions, MasterRoc SA 540 admixture has a shelf life of 12 months.

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 540 admixture.

Packaging

MasterRoc SA 540 admixture is supplied in 44 lb (20 kg) plastic bags and 2200 lb (1000 kg) bulk bags.

Related Documents

Safety Data Sheet: MasterRoc SA 540 admixture

Additional Information

For additional information on MasterRoc SA 540 admixture, 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

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