

MasterRoc[®] TSL 865

Spray applied polymer-based membrane for surface sealing and weathering protection of rock and coal strata

Material Description

MasterRoc TSL 865 is a one-component polymer-based powder for spray application onto rock and coal for surface support and protection against weathering. It provides high elasticity, high tensile strength, and improved ground stability. Sprayed concrete can be applied against the membrane as soon as it has set, and the typical bond strength (concrete to membrane) will be greater than 1.0 MPa.

Areas of Application

- Stabilization of rock and coal strata.
- In combination with mesh/screen support, with or without bolts.
- Preliminary and temporary in-cycle surface support before sprayed concrete application.
- Flexible surface support for higher deformations.
- Abutment for low pressure injection.
- Preliminary slope protection.
- After the TBM cutterhead.
- To minimize hard-rock strain bursting.
- To reduce air-slacking and rock weathering.
- Vent stopping.
- Ventilation improvement by reduced surface friction.
- Corrosion protection of standing steel support.

Characteristics and Benefits

- Fast setting, progressive increase in strength development.
- Good bond to concrete, rock and coal.
- Spray application with simple dry sprayed concrete (modified) equipment.
- Allows several 100 m conveyance distance between gun and nozzle.
- Rapid set-up, allows stop and start, minimal cleaning, no material waste.
- No toxic components.
- No classification needed for transport.

Packaging

MasterRoc TSL 865 is available in 20 kg bags.

Technical Data

Form	Powder
Color	White
Bulk density powder (+20°C)	690 g/l ± 90 g/l
Consumption per m ² and mm	0.9 kg powder
Application thickness	2 to 10 mm
Application temperature	+5°C to +45°C
Tensile strength (EN ISO 527-2)	
After:	
4 hours	> 0.6 MPa
1 day	> 1.5 MPa
7 days	> 3.0 MPa
56 days	> 3.5 MPa
Elongation at break (EN ISO 527-2)	
After:	> 150%
4 hours	> 150%
1 day	> 60%
7 days	> 50%
56 days	
Bond strength (DIN 1048-2): to concrete (after 14 days) to coal	1.7 MPa Mostly coal failure
Flammability (DIN 4102 – B2)	Self-extinguishing

Application Procedure

Depending on rock conditions, MasterRoc TSL 865 may be of a temporary nature. Complementary support measures to further strengthen the ground (rock anchors and sprayed concrete) must always be carefully considered. MasterRoc TSL 865 should be applied using the dry spraying method. Ensure that it is not sprayed without the addition of water at the nozzle.

Surface preparation

For details about this subject, please refer to the "Method Statement" document, Chapter "Surface Requirements"

Spraying technique

For details about this subject, please refer to the "Method Statement" document, Chapter "Spraying Equipment". The product is mixed with water in the spraying nozzle and impacts the substrate as a paste. The product sets within 5 to 10 minutes and will progressively increase in tensile strength and bond strength over the following hours, days and weeks.



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Consumption

About 1 kg of dry powder per square meter and mm thickness can be used as a guideline (theoretical 0.9 kg/m² and mm). Consumption generally depends on the roughness of the substrate.

Cleaning

All equipment can be cleaned by blowing compressed air through the system (release output into water in order to minimize dust generation). The nozzle itself should be inspected and cleaned with water after every break in the spraying process. During continuous application, there is no need for nozzle cleaning as long as water and air supply is sufficient (volume, pressure) and correctly adjusted.

Storage

MasterRoc TSL 865 has a shelf life of 12 months if stored in original, unopened bags between +5 °C to +40°C. The product must be kept out of direct sunlight. The storage area must be kept dry.

Precautions

The product has no toxic components. The use of gloves, eye protection and a dust mask when spraying are recommended. For further information please refer to the Material Safety Data Sheet.

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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