MasterRoc® MSL 345

Spray applied waterproofing membrane for tunnel concrete composite shell linings

Material Description

MasterRoc MSL 345 is an EVA polymer based sprayable membrane for the waterproofing of underground concrete structures. It is spray applied in a sandwich structure between two sprayed concrete / cast concrete layers, creating a double bonded composite shell lining. It is flexible and has very high bond strength properties on both sides of the membrane. It is an effective alternative to conventional waterproofing sheet membranes.
As a double bonded system, this provides excellent water tightness, preventing the development of water migration on both sides of the membrane.
As with all spray applied membranes, it is not possible to seal against water ingress through the substrate. In such cases, a drainage system or local water management using drainage pipes should be used in combination with MasterRoc MSL 345. However, it can be applied to damp substrate (if there is no running water).

Areas of Application

- Suitable for all types of tunnel designs
- Particularly well suited for underground structures with complex profiles and geometry such as stations, escape and access tunnels, utility caverns, cross passages and tunnel intersections
- Enables tunnel design with composite shell lining to reduce excavation cross section and lining thickness, and is especially suited to tunnel rehabilitations

Characteristics and Benefits

- Fast curing
- Easy to use, only addition of water needed
- Application by spraying with simple equipment
- Elasticity 80% to 140% depending on temperature
- No toxic components
- No classification needed for transport

Packaging

MasterRoc MSL 345 is available in 15 kg three-layer paper–plastic–paper bags, (50 bags on a euro-pallet).

Technical Data

Form	powder
Color	light beige
Water pressure resistance (max)	15 bar
Bulk density (+20°C)	590 g/l ± 100 g/l
Application thickness	3 to 6 mm
Application temperature	+5°C to +40°C
Failure stress (at +20°C, at 28 days)	1.5 to 3.5 MPa
Failure strain (at +20°C, at 28 days)	> 100%
Bond strength to concrete (28 days)	1.2 ± 0.2 MPa
Shore hardness (28 days)	80 ±5
Flammability (in accordance with DIN 4102-B2)	self-extinguishing

Consumption

Consumption depends on the surface roughness but is typically between 3 and 6 kg per m². For more information, please refer to the Method Statement.

Compatibility

MasterRoc MSL 345 can be applied onto all types of concrete, if the surface is clean and without loose particles. Sprayed concrete and cast concrete may be placed against the membrane surface once it has cured. It is also compatible with traditional waterproofing methods, enabling interface solutions with other systems (good bond to most sheet membranes and steel).

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Equipment

MasterRoc MSL 345 is applied by the dry spraying method using readily available dry spraying equipment like the Reed "Sove" pump.

- Rotor allowing low output (e.g., 18 pocket feedbowl)
- Rotor dust collector
- Spraying nozzle DIA 32 mm (plastic tip with collar/conical) with minimum 16-hole water ring (18 holes are recommended)
- Spraying hose DIA 32 mm

Curing

The speed of curing depends on weather conditions on site (humidity, wind conditions and temperature).
We recommend not exposing the membrane to air temperatures outside the range of +5°C and +40°C for a minimum of 5 days following application, and cyclic variations should not exceed 10°C within this range.

Storage

MasterRoc MSL 345 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 mask when spraying is recommended. For further information, please refer to the Material Safety Data Sheet.

CE-Marking (EN 1504-2)

CE

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Hallandsvej 1, DK-6230 Rødekro
DoP DK0701-01
EN 1504-2
Notified Body 0370

Waterproofing membrane. EN1504-2 method 1.3/2.3

Adhesion strength	$\geq$ 0,8 MPa
Permeability to water vapor	Class I
Capillary absorption and permeability to water:	$\leq$ 0,1 Kg/m^2·h^{0,5}
Permeability to CO_2	SD>50
Reaction to fire:	Class E
Dangerous substances:	See SDS

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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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