

MASTERSEAL[®] 345

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Elastic, waterproofing membrane for spray application in a sandwich structure with sprayed or cast in-situ concrete

Product description

MASTERSEAL[®] 345 is an EVA polymer based, sprayable membrane for the waterproofing of concrete structures. MASTERSEAL[®] 345 is spray applied in a sandwich construction between layers of sprayed or cast concrete. It has good bond strength characteristics to the substrates on both sides of the membrane and behaves elastically.

As a fully bonded system, this promotes excellent watertightness characteristics to the underground structure, preventing the development of water migration on both concrete-membrane interfaces.

As with all spray applied products, it is not possible to seal against active water ingress through the substrate. In such cases the MASTERSEAL[®] DR1 drainage system is recommended to be used in combination with MASTERSEAL[®] 345, or local management using drainage pipes. Please refer to the MASTERSEAL[®] DR1 Technical Data Sheet for details. However, MASTERSEAL[®] 345 can be applied to damp and wet (no running water) substrate.

Steel fibre reinforced sprayed concrete can be used on both sides of the MASTERSEAL[®] 345 membrane.

Fields of application

- Sprayed concrete structures
- Replacement of waterproofing sheet membranes
- In sandwich structures (concrete/membrane/concrete)
- Composite single shell permanent tunnel linings based on sprayed concrete
- Underground structures with complex profiles and geometry
- Bonds to steel and most sheet membranes and enabling interface solutions with other waterproofing methods

Features and benefits

- No toxic components
- No classification needed for transport
- Ready for use
- Fast curing
- Application by spraying, simple equipment
- Elasticity 80% to 140% between -20 °C and +20 °C
- Two-sided bond with sprayed concrete allowing a composite structure and providing excellent watertightness properties

Packaging

MASTERSEAL[®] 345 is available in 20 kg plastic bags, (50 bags on a pallet)

Technical data

Form	Powder
Colour	light brown
Water pressure resistance (max)	15 bar
Bulk density (+20°C)	590 g/l ± 100 g/l
Application thickness	3 to 6mm
Consumption depends on surface roughness (please refer to Method Statement for details)	
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	80 ±5
Flammability	self-extinguishing (in accordance with DIN 4102-B2)

Compatibility

MASTERSEAL[®] 345 can be applied onto all types of concrete, provided that the surface is clean and without loose particles. Sprayed concrete and cast concrete with or without steel fibres may be placed against the applied membrane surface, once it has cured.

MASTERSEAL[®] 345 can also be applied in combination with traditional waterproofing sheet membrane system approaches.



Equipment

MASTERSEAL® 345 shall be applied by the dry spraying method with a MEYCO® Piccola or similar.

Basic recommended equipment set-up

- Rotor 12 round hole 90 mm high
- Rotor base 90 mm coupling
- Rotor dust collector 90 mm high coupling
- Spraying nozzle DIA 32 mm (plastic tip with collar/conical) with minimum 16 hole water ring (18 holes is recommended)
- Spraying hose DIA 32 mm

The MEYCO® Piccola or chosen spray equipment must be fitted with a dust collection filter, or similar dust collection system, as shown below.



Safety precautions

The product has no toxic components. The use of gloves, eye protection and a mask when spraying are recommended.

Care must be given to the reduction of dust during application. For further information please refer to the Material Safety Data Sheet.

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 UGC representative.

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Water addition should be between 30 and 50% by product weight

MASTERSEAL® 345 should be sprayed in the ambient temperature range of +5°C and +40°C, and cyclic variations shall not exceed 10°C within this range.

Curing

The speed of curing is depending on environmental conditions on site (humidity, wind conditions and temperature).

Specific recommendations for the application of inner concrete lining please refer to Method Statement for the application of MASTERSEAL® 345 dated May 2007.

For a minimum of 5 days following application, the membrane shall not be exposed directly to temperatures outside the temperature range of +5°C and +40°C, and cyclic variations shall not exceed 10°C within this range.

If the roughness of a sprayed concrete surface requires more than 6 kg/m² of MASTERSEAL® 345, a smoothing layer of cementitious mortar should be considered. It is recommended that the smoothing mortar should have maximum aggregate size of 4mm. The mortar layer will reduce MASTERSEAL® 345 consumption significantly.

Storage

MASTERSEAL® 345 has a shelf life of 12 months if stored in original, unopened bags between +5 °C to +40°C. The storage area must be dry.