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MasterSeal® 345

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

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 **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.

RECOMMENDED USES

- Sprayed concrete structures
- Replacement of waterproofing sheet membranes
- In sandwich structures (concrete / membrane / concrete)
- Composite single shell permanent tunnel linings 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 –20ºC and +20ºC
- Two-sided bond with sprayed concrete allowing a composite structure and providing excellent watertightness properties

TECHNICAL DATA

Form	Powder
Colour	Light brown
Water pressure resistance	15 bar
Bulk density (+20ºC)	590 g/l ± 100g/l
Application thickness	3 to 6mm
Consumption depends on surface roughness (please refer to Method Statement for details)	
Application temperature	+5ºC to +40ºC
Failure stress (at +20ºC, at 28 days)	1.5 to 3.5 MPa
Failure strain (at +20ºC, at 28 days)	>100%
Bond strength concrete (28 days)	1.2 ± 0.2 MPa
Shore hardness	80 ± 5
Flammability (in accordance with DIN 4102-B2)	self-extinguishing

COMPATABILITY

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.

APPLICATION

Below are brief application instructions. For detailed instructions, please refer to the Method Statement.

Masterseal 345 shall be applied by the dry spraying method with a MEYCO Piccola. Basic recommended equipment set-up:

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

The MEYCO Piccola or chosen spray equipment must be fitted with a dust collection filter or similar dust collection system.

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Care should be taken not to create excessive dust when filling the hopper of the pumps. The floor areas near the pump should be soaked with water during the application process.

The following procedure should be implemented for all applications:

- Start water
- Start air
- Start **Masterseal 345** feed
- Apply
- Shut-off **Masterseal 345** feed
- Finally, turn off air
- When clear, shut off water

NOTE: Under no circumstances should **Masterseal 345** be sprayed without the addition of water at the nozzle. Water addition should be between 30 and 50% by product weight.

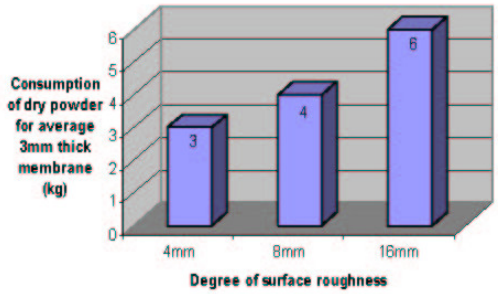
Spraying technique

Spraying distance should be between 2 – 2.5mm. Manipulation of the nozzle should be such as to promote the full coverage of the **Masterseal 345** into the surface texture of the substrate.

If blockages occur, blow out lines into barrel of water to prevent excessive dust.

ESTIMATING DATA

As a guide the following chart gives consumption rates for an average thickness of 3mm per m^2 for three varying roughness sprayed concrete substrates.



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

If an external curing agent has been applied to the sprayed concrete, this must be thoroughly removed before applying the membrane and the cleanliness checked.

Active water must be either pre-sealed, collected in hoses through the membrane, or be covered by **Masterseal DR1** sheets fixed to the concrete surface, for diversion down to the drainage system behind the membrane. A practical solution must be adapted to each individual case, and must be strictly implemented on site.

Sprayed and cast in-situ concrete can be constructed directly onto the **Masterseal 345** membrane after it has cured sufficiently. The concrete will achieve good bonding to the **Masterseal 345** membrane.

CLEANING

The dry spray machine and delivery lines should be cleaned with compressed air.

The nozzle and injector should be cleaned with water.

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.

PACKAGING

Masterseal 345 is available in 20kg plastic bags.

STORAGE/SHELF LIFE

Segregate from acids. Avoid dust formation, product dust can form an explosive mixture with air. Avoid all sources of ignition: heat, sparks, open flame. Keep container tightly closed.

Masterseal 345 has a storage life of 12 months.

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PRECAUTIONS

For the full health and safety hazard information and how to safely handle and use this product, please make sure that you obtain a copy of the BASF Safety Data Sheet (SDS) from our office or our website.

AMs345/7/0513

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