

# MasterSeal<sup>®</sup> 345

## Waterproofing Membrane

### Description

MasterSeal 345 is a sprayable membrane for waterproofing concrete structures. MasterSeal 345 membrane is spray-applied between layers of sprayed or cast-in-place concrete. MasterSeal 345 membrane exhibits high bond strength to the substrates on both sides of the membrane with good elasticity.

MasterSeal 345 membrane can be directly applied to damp sections of substrate.

### Applications

Recommended for use in:

- Cast-in-place
- Composite-designed shotcrete sandwich structures (concrete or shotcrete/membrane/concrete or shotcrete)
- Underground structures with complex profiles and geometry
- Bonds to steel and most sheet membranes enabling interface solutions with other waterproofing methods

### Features

- Dry-process material, ready-for-use
- Elasticity 80-140% (depending on the temperature)
- Fast curing
- No toxic components
- Environmentally preferable

### Benefits

- Easily applied by spraying with standard dry-process shotcrete equipment
- Two-sided bond with sprayed-concrete allows for composite behavior
- Fast curing prevents disruption of construction operations
- The fully bonded system provides excellent watertightness, preventing development of water migration in both concrete membrane interfaces

### Compatibility

MasterSeal 345 membrane can be applied onto all types of concrete, provided that the surface is clean and without loose particles. Sprayed concrete and cast-in-place concrete with or without steel fibers may be placed against the applied membrane surface, once it has cured.

MasterSeal 345 membrane can also be applied in combination with traditional waterproofing sheet membrane system approaches.

## Performance Characteristics

### Technical Data

Form	Powder
Color	Light brown
Water pressure resistance	220 psi (15 bar)
Bulk density*	36.8 ± 6.2 lb/ft <sup>3</sup> (590 ± 100 g/L)
Consumption, per in. (mm) of thickness	5.2 lb/ft <sup>2</sup> (1.0 kg/m <sup>2</sup> )
Application thickness	0.12 - 0.40 in. (3 - 10 mm)
Application temperature	40 - 104 °F (5 - 40 °C)
Failure stress at 28 days*	220 - 500 psi (1.5 - 3.5 MPa)
Failure strain at 28 days*	> 100%
Bond strength at 28 days	175 ± 25 psi (1.2 ± 0.2 MPa)
Shore hardness	80 ± 5
Flammability	Non-flammable

\*at 68 °F (20 °C)

### Guidelines for Use

**Application:** If an external curing material has been applied to the shotcrete, it must be removed prior to applying MasterSeal 345 membrane. Active water must be either presealed, collected through hoses in the membrane, or covered by drainage sheets fixed to the concrete surface, for diversion into a drainage system behind the membrane. For specific application information, please refer to the MasterSeal 345 membrane Method Statement.

MasterSeal 345 membrane should never be sprayed without the addition of water at the nozzle. Typical water content is between 60 and 70% by weight of product. The nozzle assembly must have a needle valve to allow for fine-tuning of the water and ball valve to stop and start the water flow.

**Spraying Technique:** Spraying distance of MasterSeal 345 membrane should be between 5.0-6.5 ft (1.5-2.0 m) and spraying should be done in parallel strokes, followed by a second application layer at 90° to the first application.

**Note:** The nozzle should be manipulated in a way to assure full coverage of MasterSeal 345 membrane into the surface texture of the substrate.

Depending on the roughness of the substrate, the consumption rate of MasterSeal 345 membrane is approximately 5.2 lb/ft<sup>2</sup> per in. of thickness (1.0 kg/m<sup>2</sup> per mm of thickness). If the roughness of a shotcrete layer is too high, the placement of a smoothing or leveling layer

of cementitious mortar [containing a maximum aggregate topsize of 0.16 in. (4 mm)] should be considered to provide a smooth surface. This mortar layer will significantly reduce the consumption of MasterSeal 345 membrane.

Shotcrete and cast-in-place concrete can be placed directly onto the MasterSeal 345 membrane after sufficient curing has occurred.

**Cleaning:** Cleaning of the equipment can be accomplished by blowing compressed air through the system (aiming into the water). The nozzle and injector should be cleaned out with water.

### Equipment

It is recommended that Masterseal 345 membrane be applied by the dry spraying method using readily available dry spraying equipment like the Reed "Sove" pump.

Basic recommended equipment set-up:

- Rotor allowing low output (e.g., 18-pocket feedbowl)
- Rotor Dust collector
- Spraying nozzle diameter 1.25 in. (32 mm) (plastic tip with collar/conical) with minimum 16-hole water ring (18 holes recommended)
- Spraying hose diameter 1.25 in. (32 mm)

Suitable spraying equipment should be fitted with a dust collection filter. Care should be taken not to create excessive dust when filling the hopper of the machine. The floor areas near the machine should be soaked with water during the application process to bind dust.

### Storage and Handling

**Storage Temperature:** MasterSeal 345 membrane should be stored in original, unopened bags at temperatures between 40 °F and 104 °F (5 °C and 40 °C). MasterSeal 345 membrane should be kept out of direct sunlight and the storage area must be kept dry.

**Shelf Life:** MasterSeal 345 membrane has a shelf life of 12 months if stored in original, unopened bags as recommended above. Depending on storage conditions, the shelf life may be greater than stated. Please contact your local sales representative regarding suitability for use if the shelf life of MasterSeal 345 membrane has been exceeded.

**Safety:** It is recommended that gloves, eye protection and a dust mask be used when spraying MasterSeal 345 membrane.

## Packaging

MasterSeal 345 membrane is available in 44 lb (20 kg) bags.

## Related Documents

Safety Data Sheets: MasterSeal 345 membrane

## Additional Information

For additional information on MasterSeal 345 membrane, contact your local sales representative.

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