

THOROSEAL[®] FX100

An elastomeric, cement based waterproof coating for concrete and masonry

Description of product

THOROSEAL[®] FX 100 is a blend of Portland cements, selected silica and modifying agents. When mixed to a slurry consistency with the acrylic polymer emulsion THOROSEAL[®] FX 100 Liquid, it can be easily applied by brush, roller or spray equipment. It cures to give an elastomeric flexible membrane.

THOROSEAL[®] FX Mesh is a 100% virgin polypropylene woven fabric which can be used in strip form over joints and cracks or as reinforcement for the whole application.

Uses

- For waterproofing water-retaining structures which may be subject to movement.
- As part of the THORO basement-waterproofing system, in areas sensitive to movement, vibrations and slight settlement.
- To protect concrete from water, carbonation and deicing salts.
- Suitable for internal and external use, against positive and negative water pressure.
- Suitable for use in wet area waterproofing where tiles are to be installed using a proprietary tile adhesive.

Benefits

- Retains flexible when submerged.
- Good chemical resistance against soft water, domestic waste water, manure or other liquids moderately aggressive to mineral substrates.
- Resistant to occasional foot traffic.
- Freeze-thaw resistant.
- Water vapour permeable.
- CO₂ barrier.

- Once cured, a 2mm thick THOROSEAL[®] FX100 membrane will accommodate movement up to 0.5mm, or 1.2mm when reinforced with THOROSEAL[®] FX Mesh.

Cost effective

- Simple and fast method of treating cracks and joints.
- Quick and easy brush or spray application.

Easy to apply

- Can be applied to damp substrates.
- Thin layer application.
- Equipment to be cleaned simply with water.

Environmentally friendly

- Contains no solvent, safe to handle and use approved for contact with potable water.

Packaging

THOROSEAL [®] FX100 Powder	25 kg pails or sacks
THOROSEAL [®] FX100 Liquid	10 litre cans
THOROSEAL [®] FX Mesh	50 m roll (200mm or 1000mm width)

Colours

Standard: white and grey.

THOROSEAL[®] FX100

Typical physical properties

Typical values. All tests were carried out under temperature controlled conditions of 21°C

Maximum particle size	0.63 mm	
Water vapour permeability H ₂ O	985	
CO ₂ permeability- μCO ₂	100.000	
Water resistance		
positive pressure	7 bar	
negative pressure	1.0 bar	
Water absorption (ASTM 642C)	1.48%	
Capillary water absorption	17.5 x 10 ⁻³ kg/m ² h ^{0.5}	
Elongation (28 days) ambient	23.4%	
under water	16.2%	
Freeze / thaw resistance (ISO/DIS 4846.2)	no scaling after 50 cycles	
Mechanical strengths	N/mm ²	
Tensile	28 days	0.64
Adhesive	28 days	1.00

Application

Substrate preparation

The surface to be coated must be clean and sound. Remove all traces of formwork, release agents, previous coatings, laitance, organic growth and any other contaminant that may affect the bond adversely. Suitable cleaning methods include high-pressure water treatment and grit blasting. NOT recommended are aggressive percussive methods such as scabbling. After the above treatment, surfaces must be thoroughly rinsed with clean potable water to remove all dust and loose particles.

Cracks and bolt holes must be cut out and filled solid with WATERPLUG.

Mixing

Wet density	1.68 kg/dm ³
Pot life	60 minutes
Drying time	360 minutes

Mixing liquid

Brush or roller application

± 10.0 litres THOROSEAL[®] FX100 Liquid / 25 kg powder.

Spray application

Max. 10.8 litres of THOROSEAL[®] FX100 Liquid / 25 kg powder can be used.

THOROSEAL[®] FX100 should be power mixed only, using a THORO EZ mixer attachment in a slow-speed drill (400 - 600 rpm). DO NOT use a bricklayer's mortar mixer.

Blend 25 kilograms of powder into a approximately 10.0 litres of liquid. The quantity may vary slightly depending upon the ambient conditions.

Mix maximum 3 minutes to a lump-free consistency. Allow the mix to saturate for 5 minutes and remix for maximum 2 minutes adding powder or liquid when necessary to obtain the correct consistency. Do not exceed the maximum liquid demand.

Do not overmix.

For colour uniformity always mix with the same amount of liquid.

Provide adequate ventilation when mixing and applying THOROSEAL[®] FX100.

Application

Do not apply THOROSEAL[®] FX100 to frozen substrates or if the ambient temperature is below 5°C or expected to fall below 5°C within 24 hours. Avoid application in direct sunlight.



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Always apply the mix to a pre-dampened surface. High suction substrates require more dampening than dense substrates. However, make sure there is no free-standing water. Mixed material must be used within 60 minutes, or less under hot weather conditions.

First coat

Brush, broom or spray the mix onto the pre-dampened, prepared surface, brushing well into the surface.

Strike off with the brush or broom in one direction for a neat appearance. Care must be taken not to spread the material too thinly. Typical layer thickness is approximately 1.0 mm.

When the material begins to drag or “ball”, do not add more liquid, but dampen the surface again.

Spray through a 3 - 4 mm nozzle at a pressure of 3.6 – 5.0 bar.

Reinforcing with THOROSEAL[®] FX Mesh

THOROSEAL[®] FX Mesh is embedded in a thin base layer of approximately 0.5 mm thick, covered with the first coat of THOROSEAL[®] FX100 at 1.2 kg/m² whilst still wet.

Ensure that the mesh is a minimum of 200 mm wide when treating existing cracks or joints.

Second coat

Allow to cure at least 6 hours at 20°C before applying subsequent coats. Low temperatures and high humidity will delay setting and curing. Humidification of the previous coat is only allowed in extremely dry conditions. Remove eventual condensation. Brush, roll or spray the mix onto the surface in a similar thickness as above, finishing in one direction, preferably at

90° to the previous layer to ensure good coverage.

Curing

Under hot or excessive drying conditions adequate protective shielding should be foreseen.

In cold, humid or unventilated areas it may be necessary to leave the application for a longer curing period. THOROSEAL[®] FX100 needs to cure under air-dry circumstances. Additional heating and/or ventilation can assist proper curing. NEVER use dehumidifiers during curing periods.

Coverage

Each square metre will require a minimum of 1.20 kg of powder per layer. The coverage rate for each layer will be strongly influenced by the roughness of the substrate.

An additional 0.5 kg/m² is required when embedding THOROSEAL[®] FX Mesh.

For use as a wet area waterproofing with subsequent tile installation, a thickness of 1mm will suffice.

Storage

Both components should be stored under cover, clear of the ground and stacked not more than 2 pails and cans or 6 sacks high. Protect the materials from all sources of moisture and frost (+5°C). If possible store cool. Rotate stock in order not to exceed the shelf life of 12 months for pails and THOROSEAL[®] FX100 Liquid and 6 months for sacks. Rolls of mesh should be stood on end.

Never use solvent based paints.



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Clean up and spillages

Not hardened material may simply be removed with water.

Overpainting

Do not overpaint THOROSEAL[®] FX100 in basements or other structures where the membrane is subject to negative water pressure. In above ground situations, the use of THOROLASTIC or THOROLASTIC 200/300 is recommended.

Health and safety

THOROSEAL[®] FX100 Powder is cement based and may be irritating to the skin and eyes. Gloves and eye protection should be worn. The use of dust masks is recommended.

THOROSEAL[®] FX100 Liquid is non toxic, but should not be ingested as it is based on acrylic polymers. Accidental splashes of the material to the skin or eyes should be immediately washed off with clean water. In the event of prolonged irritation, seek medical advice. In the case of ingestion give water or milk to drink and treat symptomatically. Medical advice should be sought.

A Material Safety Data Sheet for this product is available on request.

* Properties listed are based on laboratory controlled tests.

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As all BASF's technical datasheets are updated on a regular basis it is the user's responsibility to obtain the most recent issue.

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