

THOROSEAL[®] FX 100

An elastomeric, cement based waterproof coating for concrete and masonry

Description of product

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

THOROSEAL[®] FX 100 must be reinforced with mesh across all construction joints and cracks. The reinforcing mesh may be either 100% virgin polypropylene or alkali resistant glass-fibre mesh depending on which particular enhanced tensile properties are required, please consult your local BASF Technical Service Representative for further advice on the correct selection of mesh.

Uses

- For waterproofing of water-retaining structures which may be subject to movement.
- 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 flexibility 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[®] FX 100 membrane will accommodate movement up to 0.6 mm.

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.

Typical physical properties

Wet density	1.68 kg/l	
Appearance	Grey	
Tensile Strength*	EN ISO 527 Pt 3	
28 day	Air Cured 28	> 0.4 MPa
	Immersed and Dried	> 0.6 MPa
Elongation*	EN ISO 527 Pt 3	
28 day	Air Cured	> 40%
	Immersed and dried to constant mass	> 40%
Initial Tensile Adhesion	EN 14891 A.6.2	> 0.5MPa
Water impermeability	EN 14891 A.7	150 KPa
	DIN 1048	No Penetration 7 bar
Crack bridging Ability	EN 14891 A.8.2	>0.6 mm

*Tensile properties determined using 1kN load cell, 25mm wide specimens, a gauge width of 100mm and a crosshead speed of 300mm/min. Test conditions 23 ± 2°C and 50 ±5% RH. No extensometers used.

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Packaging

THOROSEAL [®] FX 100 Powder	25 kg pails or sacks
THOROSEAL [®] FX 100 Liquid	10 litre cans

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 contaminants that may affect the bond adversely. Suitable cleaning methods include ultra high-pressure water treatment and grit blasting. Aggressive percussive methods such as scabbling or scaryfying are not recommended unless followed by grit blasting, wire bushing or high pressure water jetting. 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.

Blowholes in the concrete should be filled with a thixotropic mix of THOROSEAL FX 100.

Mixing

Pot life	60 minutes
Drying time	360 minutes

Mixing liquid

Brush or roller application

± 10.0 litres THOROSEAL[®] FX 100 Liquid / 25 kg powder.

Spray application

Max. 10.8 litres of THOROSEAL[®] FX 100 Liquid / 25 kg powder can be used.

THOROSEAL[®] FX 100 should be power mixed only, using a suitable double helix mixer attachment in a slow-speed drill (400 - 600 rpm). DO NOT use free fall type mortar mixers.

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

Mix maximum for a maximum of 3 minutes and until a lump-free consistency is achieved. Allow a slake time of 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[®] FX 100 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.

Always apply the mix to a pre-dampened surface. High suction substrates require more dampening then 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.



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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 BASF Approved Mesh

BASF Approved Mesh is embedded in a thin base layer of approximately 0.5 mm thick, covered with the first coat of THOROSEAL[®] FX 100 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[®] FX 100 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 BASF Approved Mesh.

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[®] FX 100 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

Non hardened material may be removed with water using water.

Overpainting

Do not overpaint THOROSEAL[®] FX 100 in basements or other structures where the membrane is subject to negative water pressures.

Health and safety

THOROSEAL[®] FX 100 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[®] FX 100 Liquid should not be ingested, 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.

A Material Safety Data Sheet for this product is available.

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* Properties listed are based on laboratory controlled tests.

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

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