THOROSEAL®

Cement based coating for waterproofing concrete and masonry

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BASF Belgium Coordination Center Comm. V.
Business Belux - Construction Chemicals
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BE0021/01

EN 1504-2
Rigid cementitious waterproofing coating

EN 1504-2 Principles 1.3 / 2.2 / 8.2

Compressive strength	Class I
Coefficient of thermal expansion	≤ 30 x 10^{-6} / K
Water vapour permeability	Class I
Capillary water absorption	w ≤ 0,1 kg/m² x $h^{-0.5}$
Adhesion strength by pull-off test	≥ 1.0 MPa
Adhesion after thermal compatibility - Freeze/Thaw with salt - Thunder/Shower	 ≥ 1.0 MPa ≥ 1.0 MPa
Artificial weathering	Pass
Fire resistance	A 1
Dangerous substances	Complies with 5.4

Description of product

THOROSEAL is a blend of Portland cements, well-graded sands and additives supplied in powder form.

Uses

- For interior and exterior waterproofing of concrete and masonry, above and below ground level, for example, tanking of basements, water reservoirs, tunnels, swimming pools, lift pits, concrete pipes, etc.
- As a replacement for external rendering systems.
- As a waterproof coating on walls and floors of showers, bathrooms and toilets before the fixing of tiles.

Benefits

- **Durable**
- Resists positive and negative water pressure.
- Above and below ground level.
- Water vapour permeable.
- High bond strength, becomes integral part of the substrate.
- Blocks the pores of concrete through penetration.

- **Cost effective**
- Good application rate.

- **Easy to apply**
- Can be brushed or sprayed.
- To be applied on a damp substrate.
- Equipment to be cleaned simply with water.

- **Environmentally friendly**
- Cement based.
- No solvents.

Product data

Typical physical properties[(a)]

Maximum grain size		0.8 mm
Resistance to negative water pressure		4 bar
Capillary water absorption (EN 1062-3)		0.09 kg/m² x $h^{-0,5}$
Water vapour permeability - μH_2O (DFT = 3.1 mm) (EN ISO 7783-1)		96
Artificial Weathering (EN 1062-11)		Pass
Mechanical properties		
Compressive strength (EN 12190)	28 d.	48 N/mm²
Flexural (EN 12190)	28 d.	9.7 N/mm²
Adhesive Bond (EN 1542)	28 d.	3.69 N/mm²
Adhesive Bond after Freeze/Thaw (EN 13687-1)	28 d.	3.63 N/mm²

(a) Typical values. All tests were carried out under controlled conditions.

Colours

Standard: white, grey.

Coverage

A two layer application will require a minimum of 2,5 kg powder per m². Note that the quantities required may increase by up to 50% on rough substrates.

Packaging

25 kg sack.

Storage

THOROSEAL should be stored under cover and clear of the ground. Protect the materials from all sources of moisture and frost. Rotate stock in order not to exceed the shelf life of 12 months for sacks.

Application

Substrate preparation
The surface to be coated must be clean and sound. Remove all traces of formwork, release agents, previous coatings, laitance and any contaminants 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 washed with clean potable water to remove all dust and loose particles.
Cracks and bolt holes must be cut out and filled solid with WATERPLUG or THORO STRUCTURITE repair mortar.

Mixing

Wet density	2,08 kg/dm³
Pot life	45 minutes
Final setting time	300 minutes
Mixing liquid	1 part THORO ACRYL 60 / 3 parts clean water
	± 5,3 litres (4,8 – 5,8) liquid / 25 kg powder

Blend 25 kg of powder into approximately 5,3 litres of liquid (1 part THORO ACRYL 60 / 3 parts water). The quantity may vary slightly depending upon the ambient conditions. In all instances, it is important that the material is mixed to the correct consistency.
In applications where the THOROSEAL is expected to be in contact with hydrocarbons (such as diesel oil, petrol, etc.), potable water only should be used as mixing liquid. In this case up to a maximum of 5,8 litres per 25 kg of powder may be used.

Power mixing
Blend the powder into the mixing liquid using a slow-speed mortar mixer (400 - 600 rpm). Mix until a thick, batter-like consistency is obtained. Leave the THOROSEAL to stand for 5 - 10 minutes to allow full saturation to take place. Re-mix, adding a small quantity of liquid if required, to restore the consistency. Do not exceed the maximum liquid demand.

Hand mixing
Add the mixing liquid to the powder whilst stirring with a trowel or paddle to the consistency described above. Leave the THOROSEAL to stand for 10-20 minutes to allow full saturation to take place. Re-mix, adding a small quantity of liquid if required, to restore the consistency.

Application
Do not apply THOROSEAL to frozen substrates or if the ambient temperature is below 5ºC or expected to fall below 5ºC 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. Apply by specially designed THORO brush or broom. Mixed material must be used within 45 minutes, or less under hot weather conditions.

First coat
Brush or broom the mix firmly onto the pre-dampened, prepared surface. After completing 2 or 3 m², strike off with the brush or broom in one direction for aesthetic purposes. Care must be taken not to spread the material too thinly.
When the material begins to drag or “ball”, do not add more liquid, but dampen the surface again.

Second coat
Allow at least overnight to cure before applying subsequent coats. Dampen the first coat and remove excess moisture. Brush or broom the mix onto the surface (as above) finishing in the opposite direction to the previous coat.

THOROSEAL can be spray applied but should afterwards be brushed well into the substrate to ensure proper adhesion.
To improve the aesthetic appearance an additional layer can be applied by spray, eventually sponge floated to give a uniform surface.

Curing
Under hot or excessive drying conditions fog-spray after the initial set has taken place for as long as practicable.

In cold, humid or unventilated areas it may be necessary to leave the application for a longer curing period or to introduce forced air movement. NEVER use dehumidifiers during curing periods.

Clean up and spillages
Not hardened material may simply be removed with water.

Additional information
THOROSEAL fills pores and voids, forms a closely-meshed material and contains water-repellent additives. Condensation may occur after waterproofing basement areas. It could last for a considerable period in poorly ventilated areas and is most likely to form in areas which where previously damp. The formation of condensation can be alleviated by increasing the ventilation and/or plastering the walls with a lightweight, cement-based plaster.

THOROSEAL is not suitable for retaining water with a low calcium hardness and/or a pH of less than 7,2 (THOROSEAL FX100 may be used for this application). Nor is suitable for application to horizontal surfaces that are subject to freeze/thaw cycles or vehicular traffic.

If THOROSEAL is used to waterproof a potable water reservoir, a swimming pool or a fish tank, it should be washed down after the curing completed with a saline solution (salt brine), 12,5% of salts in water, and thoroughly rinsed with clean water. This process should be repeated until the required pH conditions are obtained.

Sulphate contaminated substrates exposed to negative water pressure should be treated with THOROSEAL WR.

Health and safety

THOROSEAL is based on cement and can be irritating to the skin and eyes. Gloves and eye protection should be worn. The use of dust masks is recommended. 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 is available on request.

Thoro

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