

Betec® M-5

One-component waterproofing system by crystallisation for the protection of concrete against water penetration

Product Description

Betec® M-5 is a special blend of cement, quartz sand and active chemicals in powder form for the protection of concrete against water penetration. Betec M-5 provides in-depth waterproofing and protection against water penetration by pressure of osmosis and reacts with moisture and free lime in the concrete, forming crystals which seal the capillaries and pores for waterproofing/damp-proofing of new and existing structures.

Betec M-5 can be applied by one of the following methods:

1. Slurry application by brush or spray for in-depth crystallisation of concrete post treatment.
2. Dry powder sprinkling onto lean concrete before laying the slab or on freshly placed concrete surface.
3. Integrated as a concrete additive at the time of batching, allowing catalytic crystalline growth within the concrete making it waterproof.

Product Advantages

- Offers long-term waterproofing even under high water pressure, both on the positive and negative side
- Fully integrated with the concrete, becoming an integral part of the concrete structure
- Waterproofs concrete deeply due to the penetration of insoluble crystals in the capillary system. Crystallisation starts from the surface and continues to penetrate into the concrete over time
- Reduces shrinkage and hairline cracks
- Seals hairline cracks that may occur from subsequent shrinkage or settlement, and static cracks
- Can be applied on wet surface when used as a slurry coating
- Non-toxic and odour free

Applications

- Floor, basement wall and slab
- Swimming pool, water feature
- Bathroom, balcony, wet area and planter box

- Water-retaining structure
- Parking deck



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Installation by Slurry Application

Surface Preparation

- Chase out all holes and voids and fill with appropriate type of Mortar from GCP Applied Technologies to provide a smooth, level surface. Mortar joints should be flush pointed.
- Remove all bitumen, oil, grease, dirt and other surface contaminants by wire brushing and pressure washing.
- Cut back any protrusions.
- Pre-water or damp the surface prior to application.

Mixing

- Mix Betec M-5 with water at water-cement ratio of 1:2.5.
- Mix until a homogeneous slurry, free from all lumps is formed.
- Scrape any unmixed material from the side of the mixing container with a trowel and mix in.
- Mixed materials should be used within 20 minutes, recommended not more than 30 minutes. It can be slurred again when hard but DO NOT ADD WATER AGAIN.

Application

- Apply the first coat of Betec M-5 mixed materials onto the prepared surface using a brush, trowel, squeegee or roller in a stifling action.

Physical Properties

Properties	Unit	Typical Value
Initial Set	min	≥ 20
Final Set	hr	≤ 24
Water Pressure Resistance	MPa	≥ 0.8*
Water Penetration @ 5 bars for 72 hrs	mm	12

Typical test values may represent average values from samples tested. Test methods noted may be modified.

* Typical test values based on slurry application with 2 coats at 1.5 to 2mm thickness.

Supply

Packaging	Shelf Life
20kg Plastic pail	18 months storage under dry conditions

- Apply the second coat finish depending on site conditions and film thickness required.
- Before applying the second coat in alternate direction, leave the first coat to dry approximately 1- 2 hours depending on the thickness, recommended not more than 24 hours.
- If overcoating is done more than 24 hours after applying the previous coat, or the previous coat has already dried out, the surface must be pre-wetted again.
- Protect treated surfaces from rainfall, frost and puddling of water and requirements.

Installation by dry sprinkle application:

- The surface does not need to be dry, but standing water must be removed.
- Remove all debris and laitance.
- Pre-calculate the amount of Betec M-5 required and dry sprinkle them evenly throughout the area prior to concrete placement.

Cure and Protection

- Sprinkler curing is needed when the coat is in semi-dry condition. Curing water must be clean and water flow should be managed to prevent from damage of the coating.
- In open conditions with temperature from 10°C - 20°C, sprinkler curing is needed every 3 - 5 hours.
- Curing needed when the coat turns white.
- Protect treated surfaces from rainfall, frost and puddling of water and requirements.

Installation by integration with concrete application:

- Mix Betec M-5 with a small amount of water to form slurry.
- Add required amount into the central batching mixer or ready-mix concrete truck. Ensure an even and homogeneous mix is achieved throughout before discharging the concrete.
- For advice on concrete mix design, please contact GCP Applied Technologies Technical Service.

Cleaning

All tools and equipment should be cleaned immediately with clean water after use. Hardened material can only be removed mechanically.

Consumption

- For slurry application: Apply Betec M-5 at 0.8 to 1.2kg / coat / m² in 2 coats by brush or spray.
- For dry sprinkle application: Apply Betec M-5 at 1.2kg / m² onto lean concrete binding prior to placing fresh concrete.
- For integration with concrete: Add Betec M-5 at the rate of 0.8% to 1.2% of the cementitious content on a pre-approved mix design.

Health and Safety

Read the product label and Material Safety Data Sheet (MSDS) before use. Users should acquaint themselves with all risk and safety phrases. MSDS can be obtained from GCP Applied Technologies.

Technical Services

For assistance with working drawings for projects and additional technical advice, please contact GCP Applied Technologies Technical Services.

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