

# HYSEAL CAP

Surface applied crystalline water-proofing system

**HYSEAL CAP** is a unique, surface applied penetrative crystalline capillary water proofing system that provides total and permanent water proofing solution to water leakage, ingress or seepage in concrete structures or any cementitious substrates. HYSEAL CAP is a blend of selected cement, high-grade treated fine silica aggregates and moisture activated chemicals. In the presence of water, the active chemicals present in HYSEAL CAP will penetrate in to the water bearing capillaries of concrete and react with lime to produce insoluble crystals. This crystalline growth will seal the pores and hair line cracks deep in the concrete and thus effectively block further passage of water from any direction. These active chemicals remain in the structure as a catalyst to reactivate the crystallization process whenever water enters the structure through newly formed capillaries thus ensuring permanent water tightness. Rate and penetration of crystalline development varies with the density and surface absorption of the concrete, but the crystals will penetrate to the depth to which water is present. Crystalline formation migrates throughout the pores and capillary tracts of concrete even against strong hydrostatic pressure.

## Appropriation

### Water Retaining Structures like

Water tanks/ towers  
Reservoirs and canals  
Swimming pools and concrete pipes  
Water treatment areas  
Harbors and dams

### Water resisting structures like

Basements / Terrace / Roofs  
Retaining walls, bridge decks and foundations  
Tunnels and underground car parks  
Inspection pits  
Sea defense walls and jetties

## Characteristics

Provides total and permanent waterproofing by becoming a integral part of the structure

Active ingredients of the system remain for a long period

Can withstand both positive and negative pressure.

Non toxic, suitable for potable water tanks

Protect concrete and reinforcement from corrosion due to water borne substances like chlorides and sulphates

Improve resistance of concrete structures against weathering and chemical attack

Seals hairline cracks up to 0.4mm

Does not require protection during backfilling or placing reinforcement

Can be applied in three methods

As surface coating for new and old concrete structures

As an admixture in the time of batching

As a dry shake material to the new horizontal surface

## Technical Data & Properties

Appearance: Powder

Colour: Cement grey

Standards conforms to: ASTM E 329-95

Bulk density: 1.5 kg/m<sup>3</sup>, approx.

Setting time: 2 hours, approx

Penetration rate: 2mm / 7 days

Particle size: 40-150 microns

Compressive strength: 57.5 N/mm<sup>2</sup> (on HYSEAL CAP modified mortar, BS 1881)

Flexural strength: 10.3 N/mm<sup>2</sup> (on HYSEAL CAP modified mortar BS6319)

Application temperature: 5 °C to 55 °C

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## Product Management

**Surface Preparation:** Surface to be treated must be free from dust, oil, grease, residual curing compound, release oil, paints etc. Surface should have an open capillary system. As the active chemical ingredients require moisture, the surface should be pre wetted well. High pressure water jetting is the preferred method of surface preparation because mechanical cleaning, surface saturation and substrate roughening are simultaneously achieved. Static cracks should be filled with HYSEAL CAP modified mortar and cured. Prior to the application of HYSEAL CAP, ensure that the concrete surface is damp, but free of standing water

**Mixing:** Slurry coat - Always add water to HYSEAL CAP and not vice versa. Add 1 part of water to 2 to 2.5 parts of powder by volume, to get a thick creamy consistency

Render or Mortar - HYSEAL CAP modified mortar is made by mixing HYSEAL CAP, cement and sand at a ratio of 1: 1: 4. First dry mix, and then add water to get a mortar consistency. HYSEAL CAP modified mortar should be used within 20 minutes after mixing

## Coverage:

Surface coating: 0.75kg/m<sup>2</sup>/coat

Slurry coat: 1kg/m<sup>2</sup>/coat

Dry shake: 1 to 2kg/m<sup>2</sup>

Render coat: 10kg/ m<sup>2</sup> @4.5mm thick

**Application procedure:** HYSEAL CAP is normally applied with a semi-stiff nylon brush, push broom or by appropriate power spray equipment. Apply the material in two coats at right angles. The second coat must be applied whilst the first coat is firm but fresh (usually 3 to 4 hours after the first coat). The slurry should be used within 20 minutes after mixing. If the mixture starts to set, do not add more water, but stir well to improve the workability. For further protection, apply plaster or cement/sand mortar, when HYSEAL CAP is still fresh and tacky. Clean all the tools with water

**Curing:** The HYSEAL CAP must be prevented from drying out too rapidly and should be kept damp for 5 to 7 days. Mist spraying with water and covering with polythene sheet is effective. Curing compounds are unsuitable for use with HYSEAL CAP system. Protect from weathering, sun, frost and wind for a similar minimum period. Tanks and other water retaining structures may be filled after 72 hours on application as crystal growth is accelerated by water pressure

Note - HYSEAL CAP shall not be applied at temperatures below 5 °C

**Packing & Storage:** HYSEAL CAP is available in 25 Kg bag / bucket. HYSEAL CAP should be stored in cool, dry and shaded warehouses. Shelf life is 12 months when stored under cover, out of direct sunlight, protected from extreme temperatures and as per recommendations. In extreme tropical climate, the product must be stored in cooled ambience. Excessive humidity and over exposure to UV will result in the reduction of shelf life

**Health & Safety:** HYSEAL CAP contains no hazardous substances. As with all construction chemical products, caution should always be exercised. Protective clothing such as gloves and goggles shall be worn whilst handling. Reseal all containers after use. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately. For more details, please refer to the MSDS released on each Fab product

Technical information given in this data sheet is true and exact to the best of our knowledge, laboratory upshot and field application. The data sheets of all products are revised/updated regularly and hence ensure that the latest release is used for reference and recommendation. The date of publishing is as in this sheet. All data are mean of numerous tests, assessment and analysis conducted under laboratory ambience, climatic disparity in temperature, humidity, etc... and porosity of substrate may impinge on the values.

Corporate Office:

**PHYCHEM Co. LLC**

Post Box 23940, Sharjah

United Arab Emirates

Website: www.phychem-cc.com

Under Technical Collaboration with

**MIX UK Limited,**

United Kingdom

Registered Office

S.F.No.74/2,D.No.2/196-A

Kalipalayam Road, Vellamada, Coimbatore-641110

Tel: +91 422 3213339

E-mail : mail@fab-cc.com

Website : fab-cc.com



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