

TECHNICAL DATA SHEET

HYSEAL® No.1



Surface Applied Crystalline Waterproofing System for Concrete

Description

HYSEAL No1 is a permanent waterproofing system for concrete and cementitious substrates. When applied to the surface of concrete or mortar, insoluble crystals are formed and developed in the water bearing capillaries, effectively blocking the passage of water and ensuring permanent water tightness throughout the life of the structure.

HYSEAL No1, when mixed with water, forms a slurry which is applied directly to concrete, or cement renders to provide permanent waterproofing.

The product can also be used in its unmixed powder form as a dry shake on to horizontal construction joints to provide additional waterproofing.

Applications

HYSEAL CONCENTRATE has a wide use including:-

- **Water tanks and towers**
- **Reservoirs**
- **Swimming pools**
- **Water treatment works**
- **Dams**
- **Canals**
- **Harbours**
- **Concrete pipes**

And protecting against water ingress in:-

- **Basements**
- **Tunnels**
- **Inspection pits**
- **Foundations**
- **Retaining walls**
- **Lift shafts**
- **Construction joints**
- **Sea defence walls**
- **Bridge decks**
- **Jetties**
- **Pontoons**

Action

Moisture and free lime present in the substrate react with the active chemicals in the HYSEAL No1 to create a continuous barrier of insoluble crystals which penetrate deep into the capillary structure of the concrete. These capillaries and interstices are blocked to the passage of water, whilst permitting the transmission of air and water vapour, enabling the structure to breathe.

The rate and penetration of crystalline development varies with the density and surface absorption of the concrete.

Surface penetration sufficient to provide full waterproofing properties is normally achieved after 7-10 days. Therefore, initial observations may suggest the application has not worked. This is not so - give it time!

HYSEAL No1 is equally effective against both negative and positive water or osmotic pressure and can be applied to the internal or external surface. Wherever possible however, HYSEAL No1 should be applied to the surface with which the water is in direct contact. This will result in an accelerated rate of penetration and crystallisation into the concrete structure.

After the crystallisation process has successfully waterproofed the structure, HYSEAL No1 active chemicals remain dormant in the concrete to offer long-term protection. Any later contact with water will reactivate the sealing process.

HYSEAL No1 can provide an alternative option to PVC water stops in static construction joints.

Advantages

- **Provides excellent waterproofing properties by becoming an integral part of the structure to which it is applied. Active ingredients will not delaminate, peel off or wear away.**
- **Protects concrete and reinforcement against corrosive waterborne substances.**
- **Crystalline action reactivated by contact with water providing long-term additional protection.**
- **Effective against both positive and negative water pressure.**
- **Non-toxic or tainting.**
- **Proven world-wide track record.**

Technical Data/Typical Properties

Composition: A blend of water activated chemicals, high grade silica aggregates and selected cements.

Application

New Construction - Static Construction Joints

The vast majority of leaking water retaining (or excluding) structures constructed of sound dense concrete, leak only at construction or day work joints. Costly remedial work can be avoided by the use of HYSEAL No1 as a dry shake onto the horizontal surfaces of joints or as a slurry application on vertical surfaces.

Waterproofing of Concrete Slabs

In conditions of high water table HYSEAL No1 may be applied as a slurry or dry shake over blinding concrete immediately prior to casting the slab. This sandwich system will prevent ingress of ground water preventing deterioration, and dampness or flooding.

Foundations should be treated on the external face wherever possible, as should the face of construction joints. HYSEAL No1, can be applied immediately after the formwork has been removed, as the water curing process required for HYSEAL No1 will also ensure full hydration of the concrete.

If the treatment is to be exposed and an aesthetically pleasing finish is required, HYSEAL No1 after curing should receive a sand/cement render on which to apply the desired finish.

Existing Structures

Structures subject to water leakage or ingress, must be carefully inspected to determine the cause. Any water present should be cleared away so that a thorough survey can be conducted. Dynamic cracks must be formed into a water tight elastomeric movement joint - contact.

Substrate Preparation

In common with all surface treatments to concrete, the quality of substrate preparation directly effects the performance of the system. Surfaces to be treated must be free from dust, oil, grease, paint residual curing compound, mould oil or any previous surface treatment that will impair adhesion of HYSEAL No1 treatment, or inhibit penetration of the chemicals or water into the surface.

Such substrates include polymer modified renders and those substrates treated with silicon or silane water repellents.

Remove any laitance and provide an open pored, slightly roughen surface sufficient to act as a mechanical key which is essential for adequate adhesion.

Areas of weak or honeycombed concrete must be repaired. Hollow de-bonding renders must be removed and made good. Surfaces to be treated that are not damp, must be pre wetted and still be damp at the time of application.

Mixing

Always add water to HYSEAL No1 - not in reverse order. Mix 1 part of water to 2.25 - 2.5 parts HYSEAL No1 powder by volume.

Application

HYSEAL No1 mixes are applied by brush or spray onto the dampened substrate. Apply the material in 2 coats at right angles, the second coat whilst the first is firm, but 'green' - usually 3 - 4 hours after first coat (dependant on temperature).

Curing/After Treatment

HYSEAL No1 must be prevented from drying out too rapidly and should be kept damp for 5 - 7 days. Mist spraying with water and covering with polythene is effective when drying out would otherwise take place. Curing compounds are unsuitable for use with HYSEAL No1 technology.

Protect from weathering, sun, frost and wind for a similar minimum period.

Tanks and other water retaining structures may be filled 24hours after final HYSEAL No1 application as crystal growth is accelerated by water pressure.

Plugging Leaks

Leaks and holes drilled to relieve water pressure are sealed permanently using a plugging compound of HYSEAL No1 + HYSEAL HARDENER (for further information refer to local distributor technical unit).

Note

HYSEAL No1 is not suitable for subsequent decoration unless first protected by sand/cement render.

HYSEAL No1 acts via a crystal growth mechanism. Therefore, it may take up to 28 days from application for complete waterproofing properties to be achieved.

Coverage

Two coat slurry application:
HYSEAL No1 approximately 1kg/m² per coat

Dry shake application:
HYSEAL No1 approximately 1kg/m²

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Cleaning

Clean tools and equipment immediately after use. Use of plastic or rubber containers is recommended.

Packaging

HYSEAL is supplied in 25kg

Storage

Store as for cement, in dry, cool conditions.

Shelf Life

12 months if stored according to manufacturer's in-structions in unopened containers

Mix UK Limited Ltd endeavour to ensure that any advice, recommendation or information we may give in product literature is accurate and correct. However, we have no control over the circumstances in which our product is used and it is therefore important that the end user satisfy himself by prior testing that the product is suitable for his specific application and that the actual conditions of use are suitable. Accordingly, no responsibility can be accepted, or any warranty given by ourselves, our representatives, agents or distributors, other than that the product as supplied by us will meet our written specification. Products are sold subject to our standard conditions of sale and each purchaser and end user should at all times ensure that he has consulted our latest product instructions and safety information.