ARK CHEMICALS

HY SEAL® 004

Acrylic reinforced cementitious, flexible waterproof coating

Description

HYSEAL® 004 is a two component acrylic modified cementitious coating that requires only on site mixing to form the ideal product to waterproof and resurface concrete, masonry, and most other construction materials.
Simply applied by stiff brush, roller, or trowel, it forms a waterproof, flexible coating.
HYSEAL® 004 provides an effective barrier to waterborne salts and atmospheric gases.
Fluid applied, HYSEAL® 004 provides a hard wearing, seamless, waterproof membrane for roofs and foundation protection.

Typical applications

- To reface and even out variations in concrete surfaces.
- As a waterproof lining for water retaining structures.
- For coating seawater channels.
- Sealing and coating tie bar holes to ensure watertightness.
- For waterproofing and protection against brackish water.
- To provide foundation protection.
- As a waterproof coating for roofs.
- As a backing to marble and granite to prevent water ingress and thus alleviate surface staining.
- To provide protection to concrete surfaces from carbonation and chloride attack.
- For use on pedestrian walkways in marine areas.

Advantages

- A 1mm coating provides anti carbonation cover equivalent to over 80cm of concrete.
- Waterproof
- Excellent adhesion. Bonds to porous and non-porous surfaces.
- Flexible.
- Non toxic suitable for contact with potable water.
- Suitable for light pedestrian traffic.
- Breathable - whilst repelling water, allows substrate to breathe.
- High resistance to carbon dioxide and chloride ion diffusion.
- Unlike conventional coatings which require a 7-28 day cure of concrete, HYSEAL® 004 can be applied to 24 hour-old concrete thereby giving immediate protection.

Packaging

HYSEAL® 004 is available in 20kg double pack.

Composition

HYSEAL® 004 is composed of specially selected cements, silica sand and reactive fillers supplied in powder form together with a liquid component of blended acrylic copolymers and wetting agents.

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Typical properties

Properties listed are only for guidance and are not a guarantee of performance

Density: 1940kg/m³	
Toxicity:	Non toxic - Suitable for use in contact with potable water
Initial surface absorption:	>95% reduction against control
Chloride ion diffusivity:	Not measurable after 24 months of testing
Moisture vapour transmission (equivalent air layer thickness):	SD≮1.5m (839µm dft)

Standards

BS 1881 Part 208 : 1996 - I.S.A.T.
WRAS - "Suitable for use in contact with potable water" - BS 6920 : 2000
BS 476: Part 6 : 1989 - Fire tests on building material: & structures - Method of test for fire propagation for products.

Chloride ion diffusivity

HYSEAL 004® provides an effective barrier to waterborne salts such as chlorides and sulphates. *Independent assessment has shown that even after 12 months constant immersion the chloride ion diffusion co-efficient could not be measured for HYSEAL 004®

Chemical resistance

HYSEAL 004® has outstanding wear and weather resistance and good resistance to gasoline, diesel oil, sodium hydroxide, calcium chloride, de-icing salts. HYSEAL 004® coated surfaces exhibit good resistance to mild acids.

Anti carbonation coating

HYSEAL 004® is an extremely effective barrier to atmospheric acidic gases which cause carbonation in concrete structures.
HYSEAL 004® at an applied rate of 1.8 kg/m²gives an equivalent air layer thickness for carbon dioxide diffusion (R) of 92 metres. The accepted minimum value for R is 50m. Testing to confirm this was carried out independently by Taywood Engineering 2005. A report is available on request.

Application procedure

Surface preparation:

As with all coating systems, surface preparation is of prime importance. Remove all grease, oil, dust, residual curing compound, mould release agent or other contaminant that could impair adhesion. Laitance should preferably be removed by light sweep blasting or hydro-jetting. Mechanical wire brushing may be appropriate for small areas. Spalled concrete should be cut back to sound concrete and made good with a suitable cementitious repair mortar such as EMACO R101. Conventional concrete curing compounds should be removed before application. The exception to this is when HYKURE 181 has been used.
Roofing tiles should be firmly bedded and grouted before application.

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Mixing:
HYSEAL 004® is supplied in premeasured units and should be mixed on site utilising clean containers. Slowly add the powder to the liquid and mix, using a slow speed drill fitted with a suitable paddle. MIX AND USE. Do not mix more material than can be used in one hour.
NOTE: Although HYSEAL004® is supplied in premeasured packs, part packs can be used by mixing 2 volumes of powder to 1 volume of liquid. Mix thoroughly and keep mixed during application. DO NOT RE-TEMPER WITH WATER.

Application: Do not apply to dry concrete
Saturate concrete surfaces with clean water whilst still visibly damp, but free of standing water, apply, using a short, stiff bristle brush or roller. Trowel application can be undertaken as necessary. For heavy 6-10mm depressions, honeycombs etc. use less gauging liquid and mix to the desired consistency. Where more than one coat is found necessary to achieve the desired thickness, apply the second or subsequent coats after the previous coat has dried.

It is recommended, for general resurfacing, that each coat should be a minimum of 1mm thick. Spray application is recommended for large areas, details of suitable equipment can be provided by ARKChemicals Technical Service Dept.

Specification clause

All exposed concrete surfaces are to be coated with HYSEAL 004®, a two component reactive polymer composite. The material shall be mixed and applied fully in accordance with the manufacturer's instructions. The cured coating shall have the following diffusion properties. Chloride ion diffusion	Not measurable after 24 months of testing
Moisture vapour transmission (equivalent air layer thickness)	SD < 1.5m (800µm dft)

Notes
Where subsequent tiling works are to be carried out on vertical surfaces, contact the local ARK Chemicals representative for advice.

Safety precautions
As with all chemical products, care should be taken during use and storage to avoid contact with eyes, mouth, skin and foodstuffs. Treat splashes to eyes and skin immediately. If accidentally ingested, seek immediate medical attention.

Storage
Store out of direct sunlight, clear of the ground on pallets protected from rainfall. Avoid excessive compaction.

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Failure to comply with the recommended storage conditions may result in premature deterioration of the product or packaging. For specific storage advice consult ARK Chemicals Technical Services Department.

Note
Field service, where provided, does not constitute supervisory responsibility. For additional information contact your local ARK representative.

ARK reserves the right to have the true cause of any difficulty determined by accepted test methods.