

HYSEAL PLUS

Integral crystalline admixture

Hyseal Plus is a unique, membrane free powder form integral crystalline mix penetrative capillary water proofing admixture that provides total and permanent water proofing solution to water leakage, ingress or seepage in concrete structures or any cementitious substrates. Hyseal Plus designed to add to the concrete mix at the time of batching. Hyseal Plus is a blend of selected cement, high-grade treated silica aggregates and moisture activated chemicals. The active chemicals react with the moisture in fresh concrete with the cement particles hydration to cause a catalytic reaction, which generates a non-soluble crystalline formation throughout the porous and capillary tracts of the concrete. Thus the concrete becomes permanently sealed against the penetration of water from any point. The concrete is also protected from deterioration due to harsh environmental conditions. It is designed for use in both below and above grade applications

Appropriation

Water Retaining Structures like

- Water tanks/ sewage plants
- Reservoirs and canals
- Swimming pools and concrete pipes
- Water treatment areas
- Harbors and dams
- Basements, substructures
- Retaining walls, bridge decks and foundations
- Tunnels and underground car parks
- Sea defense walls and jetties
- Parking structures

Characteristics

- Provides total and permanent waterproofing
- 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
- Become an integral part of concrete
- Allow concrete to breathe
- Add to the concrete at the time of bating so there is no climatic restraint
- Compatible with all kind of concrete admixtures; plasticizers, super plasticizers
- Non-Toxic; suitable for potable water storage units
- Reactive in the presence of moisture

Technical Data & Properties

- Appearance: Grey powder
- Dosage (by weight of cement)
 - 2% for above level
 - 2.5% for below level
- Particle size: 40-150 μ m
- Specific gravity: 2.8
- Crack sealing: 0.4 to 0.5mm
- Water penetration DIN 1048: 40% reduction
- Capillary absorption ASTM C 1585 40% reduction
- Compressive strength ASTM C 39: 5% increase
- Drying shrinkage ASTM C157: Minimum 18% reduction
- Chloride ion content: Nil

Note: for optimum dosage rate for performance of concrete and chemical resistance contact FAB technical department

The Construction Chemist...



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Product Management - Mixing

Centrally operated ready-mix plant: Mix the powder with water at a range of 18kg powder with 22 ltr of water to form thin slurry. Pour the required amount of material into the drum of the ready-mix truck. The aggregate, cement and water should be batched and mixed in the plant in accordance with standard mix design practices – taking into account the quantity of water that has already been placed in the ready-mix truck- Pour the concrete into the truck and mix for at least 5 minutes to ensure even distribution of the Hysel Plus throughout the concrete.

Dry mix plant operation: add Hysel Plus powder to the truck mixer, mix the truck under batch plant and add 60-70% of the required water along with 136-227 kg of aggregate. Mix the materials for 2-4 minutes to ensure a thorough mixing is obtained. Add balance materials to the ready-mix truck in accordance with the standard mix design practice.

Pre-cast plant operation: add Hysel Plus to the aggregate and sand, and then mix thoroughly for 2-3 minutes to ensure thorough and uniform distribution of admixture before adding the cement and water. The total concrete mass should be blended using standard mix design practice.

Point to be noted:

It is very important to obtain a homogeneous mixture of Hysel Plus with the concrete. Therefore, do not add dry powder directly to wet concrete as this may cause clumping and thorough dispersion will not occur

Mixing: Hysel Plus must be added to the concrete at the time of batching. The sequence of procedures for addition will vary according to the type of batching plant operation and equipment. The above mix designs are some typical mix design guidelines only

Limitations: the temperature of the concrete should be above 4^oC when incorporating Hysel Plus

Setting time and strength: The setting time of the concrete is affected by the chemical and physical composition of ingredients, temperature of the concrete and climatic conditions. Retardation of set may occur when using Hysel Plus. The amount of retardation will depend up on the concrete mix design and the dosage rate of the admixture. How ever under normal conditions, Hysel Plus will provide a normal set concrete. Concrete containing Hysel Plus may develop higher ultimate strengths than plain concrete. Trial mixes should be carried out under project conditions to determine setting time and strength of the concrete. Hysel Plus is designed to compatible with modern concrete practices such as fly ash and slag

Packing & Storage: Hysel Plus is available in 10kg 25Kgs bag. Hysel Plus should be stored in cool, dry and shaded warehouses. Shelf life is 12 months (under a minimum temp 7^oC) when stored under cover, out of direct sunlight

Health & Safety: Hysel Plus 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. Wearing PPE recommended for maximum safety. 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 Mix product

Formally known as MIXGUARD ICW; Rev. HP/ DEC/2016/04/IN

Technical information given in this data sheet is true and exact to the best of our knowledge, laboratory upshot and hands-on-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:
PYCHEM Co. L.L.C
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, Vellamadai,
Coimbatore-641110
Tel: +91 422 3213339, E-mail : mail@fab-cc.com
Website : fab-cc.com



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