

# HIND CRYSTAL SEAL (I)

CRYSTALLINE INTEGRAL WATERPROOFING ADDITIVE FOR CONCRETE AND MORTAR



## DESCRIPTION

**Hind Crystal Seal (I)** is a unique formulation of crystalline powder additive for concrete & mortar. The active chemicals in the compound react with the moisture in fresh concrete and by products of cement hydration resulting in a catalytic reaction to yield non-soluble crystalline formation sealing the pores and capillary tracts of the concrete permanently and also prevents ingress of water and other liquids from all directions, bearing BIS Certification Mark IS 2645:2003 and conforms to ACI 212.3R-2010.

## USES

**Hind Crystal Seal (I)** protects concrete making it 100% waterproof. It is used for waterproofing of water reservoirs, basements, foundations, water towers, tunnels, subways, swimming pools, parking lots, dams, canals, concrete pipes, water treatment plants, sea walls, bridges, decks and any concrete mix requiring waterproofing.

## ADVANTAGES

- Ready for use only to be added to concrete at the time of batching.
- It is non-toxic and free from chloride.
- Protects concrete from water penetration under hydrostatic pressure or capillary absorption.
- Possesses crack sealing characteristics
- Reduces Sulphate attack.
- Effective from both positive and negative water pressure.
- Cost effective waterproofing system.
- When added to concrete the compressive strength is not reduced.
- Low Dosage and economical.

## APPLICATION

**Hind Crystal Seal (I)** should be added to concrete at the time of batching subject to the various types of the batching plant and operation. The following process is recommended for best results. After batching of coarse aggregates, fine aggregate, cement and mineral admixture, **Hind Crystal Seal (I)** is sprinkled and dry mixing is carried out to get a uniform dry mixture. Finally gauging water with plasticizer is added and mixing is continued to get even consistency of the mix. **Hind Crystal Seal (I)** should not be added to gauging water and it is not recommended.

It is always advisable to carry out trial mixes to produce concrete and properties such as workability, setting time and compressive strength is achieved as per requirement. In hot weather conditions, addition of **Hind Crystal Seal (I)** into concrete accelerates the setting time of concrete. Curing to be carried out as per standard practice for concrete produced by addition of **Hind Crystal Seal (I)**.

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## CHARACTERISTICS (INDICATIVE)

PROPERTIES	Without HIND CRYSTAL SEAL (I)	With HIND CRYSTAL SEAL (I)
Setting Time (Initial) mins.	130	137
Setting Time (Final) mins.	171	178
Compressive Strength Mpa	38.2 (3 days)	38.7 (3 days)
	49.3 (7 days)	52.2 (7 days)
Water Permeability (v/v) of Control Mix (IS: 2645)	100	19
Chloride Ion Content % (w/w)	Not Applicable	0.02 (Max. 0.1% declared)

**Note: OPC 53 grade cement was used to all above mentioned tests.**

## Typical Test Results (Fresh & Hardened Concrete Incorporating HIND CRYSTAL SEAL (I) as per ASTM C 494 (Compatibility Test)

Tests	Reference Mix	With HIND CRYSTAL SEAL (I)	Test Method
Dosage (by weight of Cement)	X	0.8%	
Slump in mm	200 (Initial)	210 (Initial)	ASTM C 143
	135 (After 120 mins)	150 (After 120 mins)	ASTM C 143
Compressive Strength (N/mm <sup>2</sup> )	32.2 (7 days)	31.6 (7 days)	ASTM C 192
	42.3(28 days)	42.5(28 days)	ASTM C 192
	47.1(365 days)	48.7(365 days)	ASTM C 192
Shrinkage Reduction	X	39%	ASTM C 157
Reduction of Chloride Ion diffusion %	X	66%	ASTM C 1556
Alkali Silica Reaction	X	No Effect, Passes Test	ASTM C 1260
Water Permeability			
Co-efficient of Permeability Reduction (%)	X	94%	IS : 2645 & ASTM C 1306-05a
Depth of Water Penetration	37mm	4mm	IS : 2645 & ASTM C 1306-05a

## DOSAGE

0.8 to 1.0% by weight of Cement/Cementitious binder.

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## SHELF LIFE

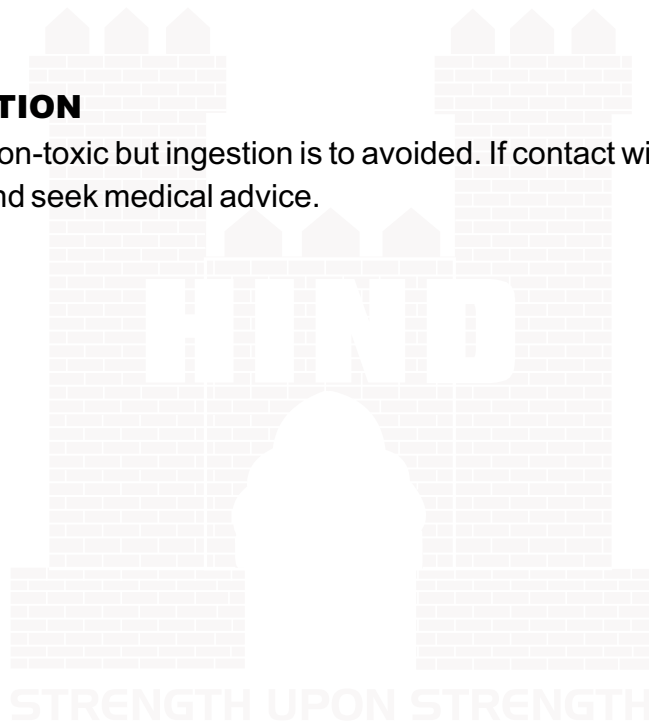
Best before 12 months from the date of manufacture. Should be stored in a cool and dry place away from direct sunlight at temperature ranging between 2°C (Min.) and 45°C (Max.).

## PACKING

Available in 10/25Kg. HDPE Bag.

## HANDLING PRECAUTION

Hind Crystal Seal (I) is non-toxic but ingestion is to avoided. If contact with eyes occurs, wash well immediately with water and seek medical advice.



## IMPORTANT NOTICE :

Hindcon Chemicals maintains a team of technically trained professionals to provide full support to your problems in construction, and recommend the correct product to suite your specific requirements. Our authorized applicators can attend your site for application of the products. The content of the Technical datasheet are for general information and guideline. The result shown here are generated from our laboratory or from our site experiences.

Quality of our products are maintained as per ISO9001:2008 recommendations and continuous researches. The behaviour can change as per the prevailing conditions at the time of applications. Since **HINDCON CHEMICALS LIMITED** has no control over the use to which the users may put the material, it does not claim or warrant that in the user's particular circumstances, the result that the user will obtain from the product will be the same as those described in this communication or that the user will find the information or recommendations complete, accurate or useful. The client must test and ascertain the safety and fitness for the product for use. The right to change the properties of the products is reserved with us. The proprietary rights of third parties must be observed. All orders are accepted subject to the terms of sale and delivery. Users must always refer to the most recent issue of the latest Data Sheet for the product concerned, copies of which will be supplied on request.



✉ contactus@hindcon.com  
☎ +91 33 24490839, 9830599113  
☎ +91 33 24490849  
📍 Kolkata, West Bengal, India

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