

# POLY CRYSTALS-T1

## DRY POWDER CRYSTALLINE WATERPROOFING ADMIXTURE

### DESCRIPTION

**Poly Crystals-T1** is a chemical admixture treatment for the waterproofing and improvement of concrete.

**Poly Crystals-T1** to protect against water intrusion, leakage, chemical attack and corrosion of reinforcing steel. These chemical react with the moisture in fresh concrete and with the by-products of cement hydration to cause a catalytic reaction. This reaction generates a non-soluble crystalline formation throughout the pores and capillary tracts of the concrete that permanently seals the concrete and prevent the penetration of water.

### TYPICAL USES

- Reservoirs
- Foundations and retaining walls
- Tunnels and subway systems
- Basements
- Pools, aquariums and water features
- On ground and suspended slabs, raft slabs
- Portable water and waste water containment structures
- Parking structures

### FEATURES

- Protects reinforcing steel from corrosion
- Reduces shrinkage
- Provides excellent resistance to waterborne chemicals such as sulphate and chloride.
- Increases flexibility in construction scheduling
- Less costly waterproofing membranes, liners or coating
- Self-seals any hairline cracks that may occur from subsequent shrinkage, settling or shifting.
- Eliminates the risk of costly repairs and damage from failed membrane systems.

**POLY CRYSTALS-T1** has been tested by SIRIM QAS International Sdn. Bhd. in accordance to BS 1881-122 : 2011, Standard Test Part 122 : Method for Determination of Water Absorption.

### DOSAGE AND GUIDELINES

- **Poly Crystals-T1** chemical admixture that is added to the concrete mix at the rate of 0.8% by weight of the cement content.
- Reduce the water content by 5-10% depending on slump requirement. Water to cement ratio must be 0.45 or less.
- **Poly Crystals-T1** will typically increase air entrainment by 2-6%. Adjust or remove air entraining admixtures (AEA) accordingly. In most cases **Poly Crystals-T1** has only a minimal affect on the air entrainment.
- **Poly Crystals-T1** is compatible with most water reducing admixtures and superplasticizers.
- Trial batches are highly recommended.

### BATCHING AND MIXING

- Add **Poly Crystals-T1** directly to the concrete mixer during batching.
- Poly Crystals-T1 can be added at anytime during the batching process. However, the addition time may affect plastic properties. Trial batches are recommended.
- A minimum of 10 minutes mixing of the materials before discharging of the concrete.

## PHYSICAL PROPERTIES

<b>Colour</b>	Gray
<b>Texture</b>	Powder
<b>Particle Size</b>	40-150 microns
<b>Bulk Density</b>	~ 1.4
<b>Water Pressure Resistance</b>	140m (460ft.) head

### PRECAUTION

- **Poly Crystals-T1** contains portland cement, therefore it becomes caustic when mixed with water or perspiration. Avoid contact with eyes and skin. Avoid breathing dust.
- **Poly Crystals-T1** will delay the setting time of concrete under most conditions. This may have an effect on stripping and finishing schedules and form pressure.

### LIMITATIONS

When incorporation Poly Crystals-T1, the temperature of the concrete mix should be above 4°C.

### SETTING TIME AND STRENGTH

The setting time of concrete is affected by the chemical and physical composition of ingredients, temperature of the concrete and climatic conditions. Extension of set time may occur when using **Poly Crystals-T1**. The amount of extended set will depend upon the concrete mix design and the dosage rate of Admix. Concrete containing **Poly Crystals-T1** 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.

### PACKAGING

Available in 20kg pail