

# EDEN CRYSTAL-LATICE

4th generation Nano Crystalline waterproofing admixture

## PRODUCT DESCRIPTION

EDEN CRYSTAL-LATICE is a 4th generation (Hydrophilic & Hydrophobic) Nano crystalline waterproofing admixture employed for use in the construction of a watertight concrete in both below and above grade application. It simply operates by reacting with moisture and free lime in the concrete, creating millions of insoluble crystalline fibres, which fill the pores, capillary tracts and minor shrinkage cracks within the concrete. EDEN CRYSTAL LATICE is a life long technology that last the life span of the structure. It forms part of the concrete mass once mixed and can be easily added during onsite concrete batching/mixing. Added benefit of protection against rebar corrosion, spalling, freeze/thaw cycles and weather-related damage is inclusive when EDEN CRYSTAL LATICE is incorporated into a design mix.

## SPECIAL FEATURES

- ✚ Improves the resistance to freeze/thaw
- ✚ Reduces repair and maintenance costs on concrete as it Self-seals hairline cracks up to 0.5mm (0.02in.)
- ✚ Reduces permeability of the concrete by forming crystalline fibres (Nano crystals) inside the capillary pores. upon contact with water (Hydrophilic water loving admixture)
- ✚ Helps to increase the compressive strength of concrete and improve concrete workability.
- ✚ An advanced innovative, Permeability Reducing Admixture for Hydrostatic conditions (PRAH), thus protecting the concrete against negative and positive water pressure.
- ✚ Inorganic, nontoxic, zero VOC (0%).
- ✚ Becomes an integral part of the concrete mass when used during casting Unlike coating, thus ensuring optimum performance.
- ✚ Forms a protective layer over concrete reinforcement bars thus protecting it from corrosion attack and other chemical attack.
- ✚ Conforms to NSF/ANSI standards.
- ✚ Reduces the risk of concrete shrinkage and cracking.
- ✚ Its a life long technology, thus protecting the concrete permanently through out its life span.
- ✚ Can improve concrete protection from sewage, waterborne chemicals and industrial wastes thanks to its continuous self-sealing technology.
- ✚ Wide range of binder compatibility with (CEM I,II,III) grade binder used in concreting.

- ✚ Waterproofing of Retaining Walls and Basements
- ✚ Waterproofing of sand and cement screed.
- ✚ Waterproofing Under-tile in Bathrooms, Terraces, and Roof top areas screeds etc.
- ✚ Roofs (flat and sloping), walls, ceiling deck, roof gutter and other wet areas Waterproofing.
- ✚ Waterproofing of bridges, commercial and industrial buildings, multi-story car parks and marine environments
- ✚ Waterproof casting of variety of structural elements such as: Tunnels and subway systems, Foundations, Precast structures, Parking structures, Water and waste water treatments plants, Reservoirs and underground vaults, Secondary containment structures

## MIXING/DOSAGING

EDEN CRYSTAL LATICE is generally dosed at the rate of **0.75–1% based on the weight of cement** and is dependent, amongst other criteria, on the concrete formula and the reactivity of the cement. Actual dosage of product is to determine with a suitability trial.

<b>Dosage Based on Weight of Cement</b>	<b>W/C Ratio</b>
0.75%	<0.4
0.8%	>0.4-0.5
0.90	>0.5-0.55

## WHERE TO USE

EDEN CRYSTAL-LATICE is suitable for application in the following areas:

- ✚ Foundation wall and water-tank Waterproofing
- ✚ Waterproofing of swimming pool casting.

### A. Ready Mix Plant

- ✚ EDEN CRYSTAL-LATICE Powder should be mixed with clean/potable water to a thin slurry consistency. i.e (20 kg) EDEN CRYSTAL-LATICE with (13.2 L) of water.
- ✚ Based on dosage adopted after trial mix analysis is obtained, mix EDEN CRYSTAL-LATICE into the



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drum of the ready-mix truck.

- ✚ Produce the cement, aggregate and additives as per concrete mix design in the batching plant. Take note of the amount of water already placed in the ready-mix truck.
- ✚ Drop the concrete mix into the ready-mix truck.
- ✚ Ensure to mix for at least 5 minutes to attain an homogenous distribution of EDEN CRYSTAL-LATICE in the concrete.

### B. Ready Mix Truck - Job Site Mixing

- ✚ Mix EDEN CRYSTAL-LATICE Powder with clean, potable water to a thin slurry consistency. i.e. (20 kg) EDEN CRYSTAL-LATICE with (13.2 L) water. Taking into account the amount of water already placed in the ready-mix truck.
- ✚ Based on dosage adopted after trial mix analysis is obtained, mix EDEN CRYSTAL-LATICE into the drum of the ready-mix truck, containing the wet concrete mix.
- ✚ Mix for at least 5 minutes to assure homogenous distribution of the EDEN CRYSTAL-LATICE in the concrete.

**NOTE:** Do not add EDEN CRYSTAL-LATICE Powder as a dry bulk to wet concrete mix. This may cause clumping and uniform dispersion cannot be guaranteed. Mix with water first, and then add to the wet concrete.

### Pipe Penetration and Joint Penetrations:

Cold joints and pipe penetrations must be designed using EDEN PVC OR Swellable waterstop. EDEN CRYSTAL-LATICE does not prevent defects in concrete. Through penetrations must be securely sealed to maintain water tightness. EDEN CRYSTAL-LATICE is designed to waterproof rigid concrete structures only and will not reliably seal cracks and joints which are subjected to variable loading or repeated movement.

### Curing:

Ensure to follow specified curing procedures as pertain to ACI guidelines.

### Durability:

Concrete treated with EDEN CRYSTAL-LATICE is waterproofed for life as there will be highly reduced

permeability and continues to formation of crystals through out the life span of the concrete.

### Non-Chloride, Non-Corrosive:

Casted concrete with EDEN CRYSTAL-LATICE will not initiate corrosion of reinforcing steel used in concrete casting. Neither sodium chloride, calcium chloride nor any chloride-based ingredients are used in the manufacture of EDEN CRYSTAL-LATICE.

### Finishes:

In the case where additional finishing such as painting or coatings is to be applied to concrete casted with EDEN CRYSTAL-LATICE, careful surface preparation is required to remove waterproofing crystals from the surface of the casted concrete. A minimum 5000 psi high pressure water blasting is recommended (Treat as observed).

### Storage and Shelf Life:

EDEN CRYSTAL-LATICE must be stored in a dry enclosed area off the ground. A shelf life of up to twelve months can be attained when stored under optimal conditions.

### Handling Precautions:

- ✚ **KEEP OUT OF REACH OF CHILDREN.**
- ✚ Avoid breathing dust.
- ✚ Endeavour to avoid contact with skin and eyes.
- ✚ Wearing a rubber gloves and safety goggles during mixing and application is recommended.
- ✚ After contact with skin, wash with plenty of water.
- ✚ If in contact with eye, ensure to rinse immediately with plenty of water for 15 minutes and seek medical advice.

### RECOMMENDATION:

#### Before Use

Check product seal to ensure it is unbroken or fake. Consult customer support should any concern arise for clarity and Technical support.

#### General

The use of EDEN CRYSTAL LATICE must not be taken as an excuse for bad concreting practices such as improper mixing, using wrong aggregate size in concrete mix, using bad or expired cement in concrete mix, using excess mixing as against recommendation e.t.c.

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## TECHNICAL PROPERTIES

<i>Packaging</i>	5kg, 20kg	<i>Concealed unit</i> <i>If stored properly in original, unopened and undamaged sealed packaging.</i> <i>Default colour (Greyish powder)</i>  <i>ASTM C39</i>  <i>ASTM C39</i>  <i>ASTM C1140</i>
<i>Shelf life</i>	12 months minimum from date of production	
<i>Appearance</i>	Grey	
<i>Solid content by weight</i>	> 89 %	
<i>Bulk Density</i>	~1.65 g/cm <sup>3</sup>	
<i>Specific Gravity</i>	~2.8	
<i>Chloride ion content</i>	<0.1%	
<i>Compressive Strength over control after 7 days</i>	16%	
<i>Compressive Strength over control after 3 months</i>	22%	
<i>Permeability reduction</i>	97% reduction	
<i>Self-Sealing</i>	Stopped water flow from crack sizes of 0.5 and 0.6mm	
<i>Crack Reduction</i>	90% reduction in shrinkage and cracks	

## APPLICATION INFORMATION

<i>Slump</i>	No significant change	(ASTM C143)
<i>Air Content</i>	No significant change	(ASTM C231)
<i>Plastic Density</i>	No significant change	(ASTM C138)
<i>Storage condition</i>	Store in dry conditions in original packaging at temperatures between +5 °C and +30 °C.	<i>Protect from direct sunlight, moisture and frost</i>

### CAUTION

- ✚ EDEN CRYSTAL LATICE is recommended for use only as described in the Uses section of this data sheet.
- ✚ Be careful to observe written instruction on all

technical documents for this product such as *Safety Data Sheet, Method Statement Data Sheet, Technical Data Sheet, and Test Certificate Results.*

- ✚ Application in cooler temperatures may require extra curing time.

### BASIS OF PRODUCT DATA

All technical data stated in this Product Data Sheet are based on laboratory tests. Actual measured data may vary due to circumstances beyond our control.

### ECOLOGY HEALTH AND SAFETY

Information on the safe handling, storage and disposal of chemical products, user is advised to refer to the most recent/updated *Safety Data Sheet, Method Statement Data Sheet, and Technical Data Sheet*, containing physical,



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ecological, toxicological and other safety/handling/storage related data.

### CLEAN UP

Wash hands and tools with EDEN super cleaner or any of EDEN recommended cleaning products promptly before the material hardens. Cured material must be mechanically removed.

### TECHNICAL SUPPORT

AISE-OHIS *EDEN CONSTRUCTION (CHEMICALS) Ltd* provides a technical advisory service supported by a team of specialists in the field.

### STORAGE AND SHELF LIFE

- ✚ EDEN CRYSTAL LATICE can be stored up to 12 months minimum from date of production if stored properly in original, unopened and undamaged / sealed packaging.
- ✚ EDEN CRYSTAL LATICE is supplied in 5kg, & 20kg buckets.
- ✚ Storage area should be in dry conditions and in original packaging at temperatures between +5 °C and +30 °C.
- ✚ Products should remain in their original, unopened containers, bearing the manufacturers name, product designation, and batch number and application precaution labels.

### STANDARD COMPLIANCE

ASTM C494 type S Compliant

### HEALTH & SAFETY

- ✚ Please ensure that hand gloves and goggles are

worn during installation

- ✚ Apply in ventilated areas, away from flames
- ✚ It is only important that during application and after application, standard safety procedures are done.
- ✚ Please consult current MSDS for product.
- ✚ For Professional Use only.
- ✚ This product contains Portland cement and sand (crystalline silica) and is highly alkaline (corrosive) which may cause significant skin and eye irritation.
- ✚ Dust may cause respiratory tract irritation.

### ADDITIONAL INFORMATION

AISE-OHIS *EDEN CONSTRUCTION (CHEMICALS) Ltd* manufactures a complete range of construction chemical products which include:

- ✚ Cementitious Waterproofing membrane
- ✚ Acrylic Waterproofing membrane
- ✚ Polyurethane Waterproofing membrane
- ✚ Bituminous Waterproofing membrane
- ✚ Flooring solution
- ✚ Damp-Proofing products
- ✚ Repair and refurbishment systems
- ✚ Water-stop
- ✚ Cleaning agent
- ✚ Bonding agents
- ✚ Decorative / Reprofiling mortars
- ✚ Tile adhesive and grouts

For more information on any of our products, please contact AISE-OHIS *EDEN CONSTRUCTION (CHEMICAL) Ltd* global or regional office.

### LEGAL NOTE

Details contained in this Technical Data Sheet is provided in good will based on the experience and knowledge of the products been stored, handled and applied properly under normal conditions. That client will be responsible to duly follow all instruction written herein. However, Whilst Aise-Ohis *Eden Construction (Chemicals) Limited* endeavors to ensure that any advice, recommendation, specification or information it may give is accurate and correct, it cannot, because it has no direct or continuous control over where or how its products are applied, accept any liability either directly or indirectly arising from the use of its products, whether or not in accordance with any advice, specification, recommendation of information given by it. Therefore, user is mandated to check/test product's suitability for the intended application and purpose. Aise-Ohis *Eden Construction (Chemicals) Limited* reserves the right to change the properties of its products. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.