

Pentra®-Shield

Concrete Surface Hardening Densifier
with Anti-scale and Freeze-thaw Protection

Convergent Group S.A.

Specialty Chemical Concrete
Treatments Commercial

Products Group
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(SiRE)™ Li

Patented Technologies by Advan

Silicon Reactive Lithium
Concrete Treatment
www.silicontreatments.com



PRODUCT DESCRIPTION

Pentra®-Shield is a clear, penetrating, breathable, surface-applied liquid that strengthens, protects and hardens concrete and masonry surfaces. Pentra®-Shield Anti-scale treatment helps protect concrete sidewalks, driveways and other concrete and masonry surfaces from freeze-thaw damage caused by moisture saturation within the pore structure of substrates. Scaling begins with the first freeze-thaw cycle and will continue through successive winter seasons resulting in repeated loss of the concrete surface, eventually leading to spalling, pop-outs and ultimately failure if left untreated.

Surfaces protected with **Pentra®-Shield** have unique protective benefits that include increased strength and durability, reduced the porosity and increased hydrophobic characteristics which provide protection against alkaline degradation, water intrusion and salt brine crystallization (sub-florescence). It may be applied on both newly placed concrete and existing concrete to protect it against damage from the elements.

KEY BENEFITS

- Excellent scale resistance caused by freeze / thaw cycles and de-icing chemicals
- Penetrating--no surface film to peel or wear off
- Does not alter the coefficient of friction of the surface
- Will not discolor or change the substrate's surface appearance
- Rapid tack-free surface cure time
- Reduces porosity and increases strength and durability

Pentra®-Shield penetrates deep into the concrete pores (tested to 8mm) where it reacts evenly throughout the surface matrix of the concrete, with excellent particle distribution during absorption. **Pentra®-Shield** water-based, low VOC formulation is environmentally friendly, easy to use, and fast acting, minimizing disruption.

CUSTOMER SERVICE:

(+32 60 390 752) to verify the most current versions, visit our website: www.convergent-group.com or scan the code.

**LIMITATIONS**

Important note: CONCRETE AND MASONRY SURFACES ONLY.

- **Pentra®-Shield** is not a crack filler.
- **Pentra®-Shield** will not inhibit water penetration through unsound or cracked surfaces, or surfaces with defective flashing, caulking, or structural waterproofing.
- DO NOT USE as a joint or expansion joint filler. The material is not designed to bridge or repair cracks.
- DO NOT USE on asphalt surfaces
- DO NOT allow **Pentra®-Shield** to come in contact with any glass, fabric, metal, or painted surfaces. Immediately wipe contaminated surfaces with a clean water saturated cloth, then wipe dry with a second clean cloth.

PACKAGING

Materials shall be stored at 18-27°C.

20 L Basket

200 L Drum

600 L Tote

1000 L Tote

USE & TECHNICAL SPECIFICATIONS

COVERAGE / TREATMENT YIELD*

1 liter per 5,51m² to 9,19m²

*Coverage rate will vary with concrete quality

DRYING TIME

4 hours. Gel Reaction within the first 20 minutes. Even though surface may be dry to touch, the treatment requires a 4 hour dry time for a complete, fully reacted cure to become insoluble.

PHYSICAL PROPERTIES

- Form Clear, pale light green, water-based solution
- Total Solids 9.9%
- 100% Active Ingredients of total solids
- Specific Gravity: 1.06
- pH 11.5
- Flash Point: N/A
- V.O.C. Content <50g/L or 0 g/L per gallon of treatment
- Freeze point 0°C
- Depth of Surface Penetration 2-8mm
- Shelf Life 1 year in factory sealed container

APPLICATION PROCEDURES & INSTRUCTIONS

Application by spray rig, squeegee or brush to existing concrete or masonry surfaces. (Always test each concrete surface for suitability and desired results. Let surface dry before inspection and approval of desired application.) Treated surfaces will be slightly darker than non-treated substrates.

Proper application is the responsibility of the user. Field visits by CONVERGENT personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.

SURFACE PREPARATION

1. Verify substrate has properly cured. Concrete should obtain 80% of design strength, typically achieved within 14 – 28 days.
2. Clean all surfaces of all sand, surface dust and dirt, oil, grease, chemical films and coatings (i.e. curing compounds, sealers or coating), and other contaminants prior to

application. Use waterblast, sandblast, or shotblast as necessary to achieve the desired surface condition.

3. Air, material, and surface temperatures should be 4°C or higher during application. Do not apply sealer when temperatures are expected to fall below -7°C within 12 hours or when rain is expected within 4 hours following the application.
4. **Pentra®-Shield** may be applied to slightly damp surfaces.
5. Caulking and sealant work may be done before or after the application of the sealer. Allow sealant to cure fully cured before application of **Pentra®-Shield**.
6. Paint line striping or safety markings after the application of the treatment.

APPLICATION

1. Test a small area of the surface (generally a 1,5 by 1,5 m section) before starting general application of **Pentra®-Shield** to ensure desired results and coverage rates. Allow 5 – 7 days for the product to fully react before evaluating. **Pentra®-Shield** is a transparent material but will slightly darken substrate.
2. Do not apply during inclement weather or when inclement weather is anticipated within 12 hours.
3. Protect asphalt-based products, such as roofing materials, plastic products, shrubbery, and plant life from overspray. To prevent damage to nearby shrubbery and landscaping, cover or protect with drop cloth.
4. Variations in the texture and porosity of the substrate will affect the coverage and performance of the product.
5. Stir material thoroughly before and during application.
6. Apply to saturation using low-pressure non-atomizing spray or pouring, followed by a squeegee or a broom for even distribution.
7. Keep the surface wet for 20 minutes with treatment for complete “gel” reaction with substrate. The gel time shall be adjusted to compensate for the change in temperature throughout the day. The temperature of the surfaces to be treated may range from 4,4°C to 49°C.
8. Typical drying time for **Pentra®-Shield** is 4 hours at 21° C and 50% relative humidity. Cooler temperatures or higher relative humidity can extend the drying time.

CLEAN UP

Use water to clean tools and equipment. **Pentra®-Shield** is alkaline and all applicable regulations should be followed for proper disposal.

HEALTH AND SAFETY PRECAUTIONS

Pentra®-Shield is an aqueous **Silicon Reactive Lithium (SiRE)™** solution that uses proprietary compounds. The treatment is alkaline and may cause eye and skin irritation. KEEP OUT OF THE REACH OF CHILDREN. Do not take internally. Avoid prolonged contact with skin. Avoid ingestion of material. If swallowed, do not induce vomiting – call physician. Avoid contact with eyes. Protective clothing is recommended. Protective goggles are recommended in case of splashing. If splashed in eyes, flush immediately with clean water and call physician if irritation persists. Contact areas should be thoroughly washed with soap and water. Additional precautions, safety information and first aid treatments are contained in the Material Safety Data Sheet. **Pentra®-Shield** Anti-scale treatment will etch glass and painted surfaces. Immediately wash off with water all overspray from glass and painted surfaces. Caution: Surfaces wet with **Pentra®-Shield** Anti-scale treatment may result in a slippery surface.

TECHNICAL SERVICE

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WARRANTY

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CONCRETE TECHNOLOGIES

Refer to www.convergent-group.com for latest Technical Data Sheet and MSDS.

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