



# Pentra-Shield™

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

Convergent Concrete  
Technologies, LLC.

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](http://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:**

(1-866-375-2280) to verify the most current versions, visit our website: [www.convergentconcrete.com](http://www.convergentconcrete.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 (65-80°F).

5 Gal Pail • 44 lbs • 20 kgs

55 Gal Drum • 484 lbs • 220 kgs

275 Gal Tote • 2,420 lbs • 1,110 kgs

**USE & TECHNICAL SPECIFICATIONS**

COVERAGE / TREATMENT YIELD\*

150-250 ft<sup>2</sup> per gallon (1 liter per 5.51 to 9.19m<sup>2</sup>)

\*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 50<gms/L 0 lbs/gal or 0 g/L per gallon of treatment
- Freeze point 32°F(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.

- Air, material, and surface temperatures should be 40° F (4° C) or higher during application. Do not apply sealer when temperatures are expected to fall below 20° F (-7° C) within 12 hours or when rain is expected within 4 hours following the application.
- Pentra-Shield™** may be applied to slightly damp surfaces.
- 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™**.
- Paint line striping or safety markings after the application of the treatment.

### APPLICATION

- Test a small area of the surface (generally a 5 by 5 ft [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.
- Do not apply during inclement weather or when inclement weather is anticipated within 12 hours.
- 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.
- Variations in the texture and porosity of the substrate will affect the coverage and performance of the product.
- Stir material thoroughly before and during application.
- Apply to saturation using low-pressure non-atomizing spray or pouring, followed by a squeegee or a broom for even distribution.
- 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 (40°F) to 49°C (120°F).
- Typical drying time for **Pentra-Shield™** is 4 hours at 70° F (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**

Customer Care  
Toll Free 866-375-2280 or  
801-375-2280

**EMAIL**

technicalservice@convergent  
concrete.com

**WEB**

www.convergentconcrete.com

**For chemical/medical  
emergencies only,**

Call Infotrac 800-535-5053  
Outside USA 352-323-3500

**WARRANTY**

**LIMITED WARRANTY NOTICE** : Every reasonable effort is made to apply exacting standards both in the manufacture of our products and in the information that we issue concerning these products and their use. We warrant our products to be of good quality and will replace or, at our election, refund the purchase price of any products proved defective. Satisfactory results depend not only upon quality products, but also upon many factors beyond our control. Therefore, except for such replacement or refund, CONVERGENT CONCRETE TECHNOLOGIES, LLC (CONVERGENT) MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS, and CONVERGENT shall have no other liability with respect thereto. Any claim regarding product defect must be received in writing within one (1) year from the date of shipment. No claim will be considered without such written notice or after the specified time interval. User shall determine the suitability of the products for the intended use and assume all risks and liability in connection there- with. Any authorized change in the printed recommendations concerning the use of our products must bear the signature of the CONVERGENTs Research Director. This information and all further technical advice are based on CONVERGENT's present knowledge and experience. However, CONVERGENT assumes no liability for providing such information and advice including the extent to which such information and advice may relate to existing third party intellectual property rights, especially patent rights. In particular, CONVERGENT disclaims all WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY. CONVERGENT SHALL NOT BE RESPONSIBLE FOR CONSEQUENTIAL, INDIRECT OR INCIDENTAL DAMAGES (INCLUDING LOSS OF PROFITS) OF ANY KIND. CONVERGENT reserves the right to make any changes according to technological progress or further developments. It is the customer's responsibility and obligation to carefully inspect and test any incoming goods. Performance of the product(s) described herein should be verified by testing and carried out only by qualified experts. It is the sole responsibility of the customer to carry out and arrange for any such testing. Reference to trade names used by other companies is neither a recommendation, nor an endorsement of any product and does not imply that similar products could not be used.



Refer to [www.convergentconcrete.com](http://www.convergentconcrete.com) for latest Technical Data Sheet and MSDS.

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**UNIQUE STRENGTHS, UNMATCHED PERFORMANCE.™**

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REVISION DATE 10014