

## PENESEAL FH

### DESCRIPTION

Peneseal FH is a transparent, chemically reactive, water-based sealer that penetrates concrete and masonry building materials, protecting, preserving and strengthening them permanently by:

**Curing:** Peneseal FH controls hairline and temperature cracking on new concrete when applied to properly placed, structurally sound, freshly finished concrete. Peneseal FH will uniformly cure the concrete through a combined chemical/moisture retention reaction so vital to the complete hydration process.

**Sealing:** Peneseal FH penetrates deep into the concrete forming a chemical reaction that locks the pores from within, providing a deep permanent seal on all types of concrete surfaces.

**Hardening:** Peneseal FH solidifies the component parts of the concrete, increasing the density, toughness and hardness and substantially increasing the abrasion resistance and durability of the concrete surface. Smooth steel troweled surfaces develop a marble-like finish and sheen. Peneseal FH treated concrete has been compressively tested 38% harder after 30 days than fully cured, untreated concrete.

**Dustproofing:** Peneseal FH chemically reacts with the salts in the concrete, densifying the surface, greatly reducing release of concrete dust through the surface pores.

**Neutralizing Alkali:** As the Peneseal FH progressively penetrates the concrete; it neutralizes the alkali forcing them to the surface where they can be washed away during the application. The deep alkali and efflorescence are locked in reducing the leaching of alkali to the surface.

**Bonding:** When properly applied, Peneseal FH prepares the treated surface for paints, caulking compounds, adhesives and floor coverings by eliminating the surface concrete salts that are so detrimental to proper bonding. Peneseal FH is coatable and compatible with any type of covering when standard surface preparation guidelines are followed.

**Treatment Results:** A single application of Peneseal FH helps cure and seal concrete and masonry, rendering them highly resistant to oils, greases, and other surface contaminants. The component parts of the concrete are solidified into a solid mass, which toughens, hardens and increases the density. The surface alkali is neutralized and efflorescence and the leaching of lime and alkali are stopped.

**Treatable Materials:** Concrete, heavyweight concrete block, mortar, plaster, stucco, terrazzo, exposed aggregate, and any sand, aggregate, cement combination.

### PACKAGING

5 gallon (19 l) pails, 55 gallon (208 l) drums and 275 gallon (1041 l) containers.

**Coverage:** Approximately 200 square feet per gallon (5m<sup>2</sup>/l). Coverage depends on the temperature and porosity of the concrete.

**Storage Life:** Indefinite. Agitate bucket or drum before using. **Do Not Allow to Freeze!**

### DIRECTIONS FOR USE

**Methods of Application:** Spray or pour and broom to saturate the surface.

**Tools Needed:** Low-pressure sprayer, soft bristle broom, squeegee, and water hose.

**Surface Preparation:** Remove surface dust, dirt and contamination by sweeping all areas to be treated with a fine bristle broom or scrub brush. Hose off with water and let dry. Remove all form oil and breaking compound residue from areas where forms have recently been removed. Peneseal FH can be applied to damp surfaces as long as all puddled areas are swept away so that the Peneseal FH is not diluted before it is able to penetrate the surface.

### For New Concrete:

**Step 1.** Apply Peneseal FH immediately following the finishing operation as soon as the surface is firm enough to walk on before hairline or temperature cracking begins. Keep the entire surface wet with Peneseal FH for 30 minutes.

**Step 2.** As the Peneseal FH becomes slippery underfoot, lightly mist the surface with water. This will keep the material in solution providing maximum penetration. Do not allow the Peneseal FH to dry on the surface.

**Step 3.** As the Peneseal FH again becomes slippery underfoot, thoroughly flush the entire surface with water and squeegee the surface completely dry to remove all surface alkali or Peneseal FH residue. On exterior broom finished surfaces, no flushing is required, but any remaining Peneseal FH must be squeegeed or broomed from the surface after 30-40 minutes.

### For Old Concrete (all cured surfaces):

**Step 1.** Saturate the surface with Peneseal FH so that the entire surface is wet with Peneseal FH for 30 minutes. Mist with water if necessary to keep material from drying on the surface.

**Step 2 (Option 1).** If after 30-40 minutes the majority of the Peneseal FH has been absorbed into the surface, broom or squeegee any excess material from all low spots and puddles so that all remaining Peneseal FH totally removed from the surface. Porous surfaces may require an additional application of Peneseal FH to achieve maximum protection.\*

**Step 2 (Option 2).** If after 30-40 minutes the majority of the Peneseal FH is still on the surface, wait until it becomes slippery underfoot, then thoroughly flush the entire surface with clear water and squeegee completely dry to remove all Peneseal FH residue.

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## TECHNICAL DATA

### Applicable Standards:

- ◆ Abrasion: ASTM C 779 - 32.7% increase in abrasion resistance.
- ◆ Bonding: ASTM D3359 -17% increase in epoxy adhesion. No change for polyurethane adhesion.
- ◆ Curing: 94% greater moisture retention during the initial critical 24 hour curing period as compared to untreated samples.
- ◆ Hardening: ASTM C 39 - 40% increase in compressive strength 7 days; 38% increase at 28 days over untreated samples. ASTM C 805 - Schmidt hammer - 13.3% increase in impact resistance.

**Permeability:** The seepage rate using a 7 foot (213 cm) head of water on a 4.91 square inch (31.7cm<sup>2</sup>) area treated with Peneseal FH was 0.022cc per hour.

**Weathering:** ASTM G2381 - ultra-violet light and water spray exposure had no adverse effect on Peneseal FH treated samples.

**Thinners:** None required. Clean all equipment with water only.

### Number of Applications Required:

One application is typically required. An additional application may be required on porous substrates to achieve maximum performance.

**Duration of Effectiveness:** Permanent. The concrete becomes harder and better sealed the older it becomes.

**Time Requirement for Curing, Sealing and Hardening:** 60-90 days. Unlike surface coatings that wear away with use, Peneseal FH seals the concrete from within by permanently locking the pores, thus making the concrete itself the penetration barrier. This process is essentially complete within 90 days, but may continue at a much slower rate for up to one year.

**Color:** Clear. Peneseal FH will not change the natural appearance of the masonry or concrete. Where alkali, lime and other impurities are forced to the surface and the natural appearance is to be preserved, all treated surfaces must be flushed clean with clear water according to the manufacturer's instructions.

**Sheen:** On smooth steel troweled concrete surfaces a natural wax-like sheen will appear between 6 and 12 months after treatment. This sheen is caused by the hardening and sealing effects of the Peneseal FH as well as abrasion from cleaning and use of the floor. As a permanent part of the concrete surface, the sheen will last the lifetime of the surface with proper cleaning and maintenance.

**Application Temperature Limits:** 100°F, 40°F (40°C, 5°C). At low temperatures completely protect new concrete from freezing for a period of six days. The reaction of the Peneseal FH will also be slowed during colder temperatures.

**Drying Time:** 1-3 hours. The surface can be used as soon as the application is complete and the surface is again dry to the touch. Newly placed concrete requires the normal hardening period.

**Painting or Covering Preparation:** Old concrete - allow 3-7 days before applying paint or coverings. New concrete - allow 30 days for proper curing.

**Internal Makeup:** Non-toxic, non-combustible, non-flammable. Not harmful to lungs or hands. Complies with all V.O.C. and U.S.D.A. regulations.

**Limitations:** Do not apply Peneseal FH in the following cases:

- ◆ To seal lightweight block or other extremely porous masonry that contains actual holes and air pockets.
- ◆ When temperature falls to below 40°F (5°C).
- ◆ To areas previously treated with curing or sealing agents, unless these coatings have been removed by chemical or mechanical means.

**NOTE:** Avoid use on glazed and finished surfaces such as glass, aluminum, etc. In case of contact, flush immediately with water.

## AVAILABILITY AND COST

Peneseal FH manufactured exclusively by ICS Penetron International Ltd. is distributed throughout the United States direct to the job-site or through regional factory warehouses and is competitively priced. For specific price information contact ICS Penetron International Ltd.

## MAINTENANCE

Floors: Wash or wet mop with neutral or high pH detergent.  
Walls: Flush with water.

## TECHNICAL SERVICES

Technical information and assistance can be obtained from ICS Penetron International Ltd.

## WARRANTY

ICS PENETRON INTERNATIONAL LTD. warrants that the products manufactured by it shall be free from material defects and will conform to formulation standards and contain all components in their proper proportion. Should any of the products be proven defective, the liability to ICS PENETRON INTERNATIONAL LTD. shall be limited to replacement of the material proven to be defective and shall in no case be liable otherwise or for incidental or consequential damages. ICS PENETRON INTERNATIONAL LTD. makes no warranty as to merchantability or fitness for a particular purpose and this warranty is in lieu of all other warranties expressed or implied. User shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith.