

# RENEW<sup>®</sup> WS

## SELF-LEVELING, INTERIOR WEARING SURFACE

### DESCRIPTION

RENEW<sup>®</sup> WS is a single component, smooth flowing, economic, pumpable, self-leveling, fast-setting overlayment intended as a restorative wearing surface over distressed, worn or rain-damaged, structurally sound concrete. It contains polymer-modified, Calcium Aluminate cement, combined with mineral aggregate to produce fast-setting, high-strength characteristics.

### APPLICATIONS

Aisleways, manufacturing, storage and shipping  
Distribution centers and warehouses  
Distressed and worn concrete floors  
Rain-damaged slabs  
Parking garage floors  
Public utilities  
Convention hall floors  
Correctional institutions  
Showrooms  
Floors designed to meet a specific flatness

### ADVANTAGES

Ready to use with addition of water  
May be extended with pea gravel  
Highly durable  
Economical in-place cost  
Highly fluid for pumped or poured application  
Crack and shrink resistant  
Rapid high-strength gain  
Ready for limited foot traffic in four hours  
Maintains workability for over 15 minutes  
Moisture resistant  
Suitable for staining and polishing  
Accepts resinous coatings and toppings

### TECHNICAL DATA

All data have been derived from tests under laboratory conditions. (Field conditions may yield slightly different results.)

#### Mixing water (per 50-lb (22.7-kg) bag):

4.5 quarts (4.3 liters)

#### Compressive strength (ASTM C109):

1 day	2800 psi (19.3 MPa)
7 day	4300 psi (29.7 MPa)
28 day	6000 psi (41.4 MPa)

#### Flexural strength (ASTM C348):

28 days 950-1000 psi (6.6-6.9 MPa)

#### Cracking:

NONE through 28-day test

#### Tensile bond strength:

28 days 200 psi (1.4 MPa)

#### Type failure:

Bond

#### Set (ASTM C191):

Working time	25 minutes
Initial set	35 minutes
Final set	40 minutes

#### Application temperature range:

50-90°F (10-32°C)

**NOTE:** Above 85°F (29°C), use ACI Hot-Weather Application Guidelines.

#### Approximate coverage (Yield) per 50-lb (22.7-kg) bag:

1/4" (6 mm) 23 sq ft (2.1 m<sup>2</sup>)

Over 2" (5 cm), add 15 lb (6.8 kg) of clean, washed, dry 3/8" (10 mm) pea gravel per 50-lb (22.7-kg) bag of RENEW<sup>®</sup> WS.

### STORAGE / SHELF LIFE

This product has a nominal shelf life of one year from the date of manufacture, when unopened bags are properly stored in a cool, dry, and shaded environment.

### PACKAGING

RENEW<sup>®</sup> WS is supplied in 50-lb (22.7-kg) kraft paper bags, reinforced with a polyethylene inner lining to ensure moisture resistance.

## QUALITY CONTROL: The Fail-Safe System

Due to the many variables that can affect consistency and flow in all leveling products, it is recommended that the Penetron SP Fail-Safe system be incorporated when mixing the RENEW® WS.

Please obtain a Fail-Safe kit from your Penetron representative prior to mixing.

- To ensure proper consistency and performance, the flow of the material using the Fail-Safe ring should never exceed 11 inches (28 cm).
- As a baseline, mix a 2-bag batch. For each bag, start with 4 qt (3.8 l) of water per bag, holding 0.5 qt (0.5 l)/bag in reserve.
- Mix to a smooth lump free consistency and check flow with the Fail-Safe ring. If more flow is desired, slowly add reserve water until the desired flow is achieved, never to exceed 11 inches (28 cm) of flow or the water to exceed 4.5 qt (4.3 l) per bag.
- Determine the water required to get the desired flow and monitor batches using the Fail-Safe method, making adjustments as necessary to achieve the desired flow, not to exceed 11 inches (28 cm).
- For pumping installations, the mixed material at the end of the hose should produce the same result as the baseline test.

## DIRECTIONS FOR USE

### Surface preparation:

**NOTE:** Proper bond, and therefore preparation, are crucial in obtaining a successful overlayment installation. The installing contractor is responsible for ensuring substrate is properly prepared prior to application of RENEW® WS. To ensure installation success, be sure to test a small area for compatibility, bond strength, and performance.

Concrete substrate must be cleaned immediately prior to primer and topping application, should be free of dust, oil, curing compounds, paints, asphalt, scalers, coatings and/or any other matter that may cause loss of bond. Remove any loose, frozen, broken, and carbonated concrete. Shotblasting equipment is recommended for achieving mechanical removal of unsound concrete, coatings, curing compounds, sealers, etc.

Joints, cracks and drilled or sawed holes should be filled or grouted to prevent seepage of primer and underlayment. Joints in substrate must be reflected (tooled or sawed) in applied topping.

### Priming:

PRIMER STX 50™ is customarily mixed 1:1 with clean water to aid in bonding RENEW® WS to substrate and to avoid “pinholing” caused by entrapped air in substrate. Primer may be applied up to 24 hours before application of topping. Dilute PRIMER STX 50™ 1:1 with clean water. Extremely porous concrete may require two coats of primer mixture or one coat of undiluted primer. One gallon (3.8 L) of PRIMER STX 50™ mixed with one gallon (3.8 L) of water will cover approximately 350-400 ft<sup>2</sup> (32.5-37.2 m<sup>2</sup>) of floor area. Using a push broom with exploded tips, apply a thin primer coat and allow to completely dry (approximately 3-4 hours @ 70% humidity), prior to application of RENEW® WS. PRIMER STX 100™ may also be used, mixed 1 part clean water to 1 part primer. Coverage is approximately 200 to 300 sg ft per mixed gallon (4.9-7.4 m<sup>2</sup> per liter).

### Mixing:

- Add topping to water! DO NOT reverse this process by adding water to material.
- Mix in a mixer/pump or mechanical concrete mixer, following manufacturer’s instructions. Use precisely 4.5 qt (4.3 L) of clean water per 50-lb (22.7-kg) bag and mix for 1-2 minutes until mixture is smooth and free of lumps.
- For small jobs, use a stainless steel paddle with a 1/2” (13 mm) min. 650 rpm drill, mixing to a lump free consistency.
- For applications over 2” (5 cm) in thickness: Extend mixture with precisely 15 lb (6.8 kg) of clean washed and dry, 3/8” (10 mm) pea gravel per 50-lb (22.7-kg) bag.

**IMPORTANT:** When extending, mix neat topping as described above. Then, add pea gravel and mix again until smooth and free of lumps.

### Application:

Ensure base slab temperature is over 40°F (4°C), and ambient temperature will not be below 50°F (10°C) during placement and/or before underlayment will take final set. RENEW® WS flows best if mixing water is approximately 70°F (21°C). Maintain mixing water temperature at 50-90°F (10-32°C). Pour or pump mixed topping to desired thickness, but not less than 1/4” (6 mm). Properly mixed topping will seek its own level within 15 minutes at 65°F (18°C). A hand spreader or concrete come-along may be used to prompt material around pipes and hard to reach areas.

### Curing:

RENEW® WS is self-curing. It is walkable in 3-4 hours @ 73°F (23°C). Wait 24 hours or more before installing floor covering, polishing, resinous coating/toppings or light traffic. If applying a resinous coating/topping system, verify compatibility by installing a test application.

# RENEW® WS

## APPLICATION TOOLS

Mixing drum, mixing paddle, depth gage spreader, surface smoother, 1/2" heavy duty drill, approved pumping equipment.

## SPECIAL CONSIDERATIONS

- Store in a dry environment.
- DO NOT use this product if bag is damaged or opened.
- This product is ready to use with the addition of water. DO NOT add any materials or additives to mixture other than those described above.
- DO NOT use on floors that will be exposed to acids (or their salts) or other materials that may seriously and/or rapidly attack cement.
- During application, protect topping from direct sunlight, wind, rain, snow and other forms of moisture.
- Consult Penetron representative when questionable conditions prevail or for additional information.

## JOB MOCKUPS

The manufacturer requires that when its Penetron Specialty Products are used in any application or as part of any system that includes other manufacturers' products, the contractor and/or design professional shall test all the system components collectively for compatibility, performance and long-term intended use in accordance with pertinent and accepted industry standards prior to any construction. Written documentation of the tests performed shall be satisfactory to the design professional and contractor. Test results must include the means and methods of application, products used, project specific conditions being addressed, and standardized tests performed for each proposed system or variation.

## SAFE HANDLING INFORMATION

Avoid contact with eyes. Wear suitable protective eyewear. Avoid prolonged or repeated contact with skin. Wear gloves. Wear suitable protective clothing. Do not breathe dust. In case of insufficient ventilation, wear respiratory equipment. Wash clothing before reuse.

**First aid:** Wash exposed skin with soap and water. If breathing is difficult, move person to fresh air.

**Waste disposal method:** This product, when discarded or disposed of, is not listed as a hazardous waste in federal regulations. Dispose in a landfill in accordance with local regulations.

**Additional information:** For additional information regarding personal protective equipment, first aid and emergency procedures, refer to the product Safety Data Sheets (SDS).

KEEP OUT OF REACH OF CHILDREN

**WARRANTY:** PENETRON SPECIALTY PRODUCTS INC. 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 PENETRON SPECIALTY PRODUCTS INC. 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. **PENETRON SPECIALTY PRODUCTS INC. 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 its intended use and assume all risks and liability in connection therewith.

This Product Data Sheet has been prepared in good faith on the basis of information available at the time of publication. It is intended to provide users with information about and guidelines for the proper use and application of Penetron Specialty Products under normal environmental and working conditions. Because each project is different, PENETRON SPECIALTY PRODUCTS INC. cannot be responsible for the consequences of variations in such conditions, or for unforeseen conditions.

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