

# Eco-Crete™ HF

## Trowel Applied Urethane Mortar



**DESCRIPTION** - A three-part, cementitious-polyurethane troweled system for resurfacing interior concrete floors in areas that require thermal shock resistance.

- **MOISTURE TOLERANCE** – Eco-Crete HF (at 1/4”) is good for moisture vapor transmission up to 23 lbs/1,000 ft<sup>2</sup> in 24 hours as measured by calcium chloride tests per ASTM F1869 or 99% RH, as measured by relative humidity readings per ASTM F2170.
- **LEED® v4** – Points available under the following credits:
  - **Indoor Environmental Quality, Low Emitting Materials**  
Meets requirements per CDPH-CA Section 01350 Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental chambers Version 1.2.
  - **Materials & Resources, Building Product Disclosure & Optimization-Sourcing of Raw Materials**  
Bio-Based Materials
- **ADVANCE YOUR SUSTAINABILITY GOALS** – Utilizes renewable bean oils and environmentally friendly packaging.
- **EXTREME THERMAL STABILITY** – Steam cleanable. Formulated to withstand temperature variations up to 250°F (121°C)
- **SEAMLESS** – Hygienic finish; no grout joints

### PRIMARY APPLICATIONS

|                                       |                             |
|---------------------------------------|-----------------------------|
| Food & beverage processing facilities | Chemical process facilities |
| Pharmaceutical facilities             | Pulp and paper mills        |
| Wet processing & packaging areas      | Commercial kitchens         |
| Freezers and coolers                  | Battery charging areas      |
| Truck unloading areas                 |                             |

### BENEFITS

|  |  |
|--|--|
| Resistant to fungi growth per ASTM G-21  | Low odor, fast installation, fast cure       |
| Impact & abrasion resistant surface suitable for heavy traffic and fork lift operation | Excellent corrosion & chemical resistance    |
| High temperature resistant to 250°F (121°C)  | Anti-slip surface, meets ADA recommendations |
| Resistant to moisture vapor transmission (MVT)   | Apply to concrete as new as 7 days           |

### APPLICATION COVERAGE RATE

|  |                   |
|--|-------------------|
| Coverage Rate, ft <sup>2</sup> /gal [m <sup>2</sup> /L]) | 23 [2.1] per unit |
| Application Thickness, inches [mm]                       | ¼” [6.35]         |

### MATERIAL PROPERTIES

| Property                                     | Test Method | Results               |
|--|-------------|-----------------------|
| Volatile Organic Compound, VOC, lb/gal [g/L] | ASTM D3960  | A+B+C = 0.04 [5]      |
| Compressive Strength, psi [MPa]              | ASTM C579   | 7800 [53.78]          |
| Tensile Strength, psi [MPa]                  | ASTM C307   | 975 [6.72]            |
| Flexural Strength, psi [MPa]                 | ASTM C580   | 1900 [10.34]          |
| Bond Strength                                | ASTM D-4541 | 100% Concrete Failure |
| Impact Strength, in-lb                       | ASTM D-4226 | >160                  |
| Resistance to Fungi Growth                   | ASTM G-21   | Passes, Rating of 1   |
| Flammability                                 | ASTM D635   | Self-extinguishing    |

Testing performed at 70°F [21.1°C]. The data shown above reflects typical results based on laboratory testing under controlled conditions. Variations from the data shown may result. Test methods are modified where applicable.

### INSTALLATION DATA

|   |                                  |
|---|----------------------------------|
| Application Temperature, ambient °F [°C]  | 40-85 [4.4-29.4]                 |
| Application Temperature, material °F [°C] | 50-80 [10-26.6]                  |
| Pot Life, @ 77°F [25°C]                   | 15 minutes                       |
| Traffic, @77°F [25°C]                     | Light: 12 hours / Full: 24 hours |
| Fully Cured, @ 77°F [25°C]                | 7 days                           |

**TENNANT COATINGS**

*For First Impressions That Last™*

## GENERAL PRODUCT INFORMATION

|                       |   |
|-----------------------|---|
| <b>STORAGE:</b>       | Materials should be stored indoors between 65°F [18°C] and 80°F [26.6°C].   |
| <b>SHELF LIFE:</b>    | Six months from date of manufacture.  |
| <b>PACKAGING</b>      | 1 gallon / 9014428 (½ gallon Part A, ½ gallon Part B, 1 bag C + 1 powder pigment)   |
| <b>OPTIONS / PART</b> | 10 gallons / 9014432 (5 gallons Part A, 5 gallons Part B, 10 bags C + 10 powder pigments)   |
| <b>NUMBERS:</b>       | 500 gallons / 9014435 (250 gallons Part A, 250 gallons Part B, 500 bags C + 500 powder pigments)  |
| <b>OPTIONS:</b>       | <p><i>Powder Pigments:</i> Available in Red, Gray, Dark Gray, Tan, Green, Safety Yellow and Black</p> <p><i>Standard Colorants:</i> Tile Red, Canada Gray and Medium Gray are typically used in Eco-Crete HF. Call Tennant Technical Support for other color options.</p> <p><i>Cove:</i> A seamless, smooth transition can be created between the flooring and wall using Eco-Crete CB.</p>  |
| <b>LIMITATIONS:</b>   | <p><i>Contamination (Fisheyes):</i> Product may not adhere if oil, silicones, mold release agents or other contaminants are present.</p> <p><i>Movement:</i> Moving joints and cracks will reflect through the installed system. 7 day old concrete may be coated, but any shrinkage cracks that form may show in the Eco-Crete.</p> <p><i>UV/Light Stability:</i> This product is not light stable and will yellow/amber over time unless topcoated with optional UV resistant topcoat.</p> <p><i>Product Stability:</i> Part A and Part B resins must not be allowed to freeze. If you suspect product has frozen, please call Tennant technical support.</p> |

## CHEMICAL RESISTANCE PROPERTIES

| Eco-Crete HF                     | 1 Day | 7 Days | Eco-Crete HF   | 1 Day | 7 Days |
|----------------------------------|-------|--------|--|-------|--------|
| <b>Acids, Inorganic</b>          |       |        | <b>Solvents (Ketones &amp; Esters)</b>   |       |        |
| 10% Hydrochloric Acid            | G     | G      | Methyl Ethyl Ketone (MEK)  | G     | P      |
| 30% Hydrochloric Acid (Muriatic) | G     | G      | Propylene Glycol Methyl Ether Acetate (PMA)  | G*    | G      |
| 10% Nitric Acid                  | G     | G      | <b>Miscellaneous Chemicals</b>   |       |        |
| 50% Phosphoric Acid              | G     | G      | 20% Ammonium Nitrate   | G     | G      |
| 10% Sulfuric Acid                | G*    | G*     | Brake Fluid  | E     | G      |
| 37% Sulfuric Acid (Battery Acid) | G*    | G*     | Bleach   | G*    | G*     |
| <b>Acids, Organic</b>            |       |        | Motor Oil (SAE 30)   | E     | E      |
| 10% Acetic Acid                  | G     | G      | Skydrol® 500B  | E     | E      |
| 10% Citric Acid                  | G*    | G*     | Skydrol® LD4   | E     | G*     |
| 50% Citric Acid                  | G     | G      | 20% Sodium Chloride  | E     | E      |
| Glacial Acetic Acid              | G     | P      | 1% Tide® Laundry Soap  | E     | E      |
| Lactic Acid 88%                  | G*    | G*     | 10% Trisodium Phosphate  | E     | E      |
| Oleic Acid                       | E     | G*     | Castor Oil   | E     | E      |
| <b>Alkalies</b>                  |       |        | Vegetable Shortening   | E     | E      |
| 10% Ammonium Hydroxide           | E     | E      | Water  | E     | E      |
| 50% Sodium Hydroxide             | E     | E      | High Fructose Corn Syrup   | E     | E      |
| <b>Solvents (Alcohols)</b>       |       |        | Hydrogen Peroxide  | G*    | G*     |
| 30% Ammonium Hydroxide           | E     | G*     | White Wine   | G     | G      |
| Ethylene Glycol (Antifreeze)     | E     | E      | Red Wine   | G*    | G*     |
| Isopropyl Alcohol                | G*    | G*     | Vodka  | E     | E      |
| Methanol                         | G*    | G      | Ketchup  | G     | G*     |
| <b>Solvents (Aliphatic)</b>      |       |        | Mustard  | G*    | G*     |
| d-Limonene                       | E     | E      | Coffee   | G*    | G*     |
| Jet Fuel - JP-4                  | E     | E      | Coke®  | E     | G*     |
| Gasoline                         | E     | E      | Fish Oil   | E     | E      |
| Mineral Spirits                  | E     | E      | Dish Liquid Hand Soap (Full Strength)  | G*    | G*     |
| <b>Solvents (Aromatic)</b>       |       |        | Octave™ FS Sanitizer   | G     | G      |
| Xylene                           | E     | E      | Registered trademarks: Tide® of Procter and Gamble, Skydrol® of Solutia, Inc., Octave™ of Ecolab® and Coke® of Coca-Cola Co. |       |        |
| <b>Solvents (Chlorinated)</b>    |       |        | Results are based on 1-day and 7-day spot testing. Coating cured 2 weeks prior to testing.                                   |       |        |
| Methylene Chloride               | P     | P      |  |       |        |

ASTM D1308 Test Method 3.1.1 spot test, covered. Results are based on 1-day and 7-day. Coating cured 2 weeks prior to testing.

**Legend:**

E - Excellent (No Adverse Effect) - Recommended. F - Fair (Moderate Adverse Effect) - Not recommended.  
 G - Good (Limited Adverse Effect) - Use for short-term exposure only. P - Poor (Unsatisfactory) - Little or no resistance to chemical.

\*Only adverse effect was staining. **NOTE:** Reduced chemical resistance and staining is possible in pigmented versions of the system.

**IMPORTANT: READ AND FOLLOW ALL PRECAUTIONS AND INSTRUCTIONS BEFORE PROCEEDING.**

**PLEASE SEE SAFETY DATA SHEET (SDS) FOR HANDLING PROCEDURES.**

**USE PRODUCT AS DIRECTED.**

**KEEP OUT OF THE REACH OF CHILDREN.**

## PRELIMINARY FLOOR INSPECTIONS

**CHECK THE TEMPERATURE AND HUMIDITY:** Floor temperature should be between 40°F (4.4°C) and 85°F (29.4°C) and material temperature should be between 50°F (10°C) and 80°F (26.6°C) for Eco-Crete HF. Humidity must be less than 80%. **DO NOT** coat unless floor temperature is more than five degrees over the current, local dew point.

### **BARE CONCRETE**

**CHECK THE CONCRETE:** Concrete must be structurally sound and free of curing membrane, paint and/or other sealer with no standing water. If you suspect that the concrete has been previously sealed, call Tennant Company Tech Support for further instructions.

## APPLICATION EQUIPMENT

|  |                            |
|--|----------------------------|
| • Protective clothing  | • Spiked shoes             |
| • Screed Box   | • Mohair / Adhesive Roller |
| • Mortar mixer – (Baugh, Imer or Kol mixer)  | • Roller Assembly          |
| • Trowel (stainless steel), 4"x12" (101.6 x 304.8 mm)<br>Pool Trowel, Notch Trowel and Margin Trowel |                            |

**ASSEMBLE EQUIPMENT:** Due to the limited pot life of the material, all application equipment, etc. should be ready for immediate use. (Clean roller with tape to remove any residual lint.)

## PREPARATION

Detergent scrub and rinse with clean water to remove surface dirt, grease, oil and contaminants.

*Steel shot blast (minimum shot size of 330) to a minimum surface profile of CSP-5 meeting ICRI (International Concrete Repair Institute) standard guideline #310.2R. Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust.*

*Scarify:* Sweep to remove large debris and vacuum to remove fine dust.

Key-in all termination points, drains and joints that may move with a 1/4" (6.35 mm) by 1/4" (6.35 mm) cut.

Patch all depressions, divots and stress cracks in concrete with Eco-Crete HF.

**JOINTS:** Fill all static (non-moving) cracks or control joints with Eco-Crete HF. Cracking of the resurfacer will occur over joints that are overlaid and later move. Because resurfacers are not flexible, joints that might move should be honored (cut) after the installation and filled with Eco-PJF or Eco-EJF. Isolation joints must be honored and filled with a flexible material designed for this purpose.

## APPLICATION - OVERLAY

**COVERAGE RATE:** Coverage rate will depend upon application thickness. A one bag mix will nominally cover (finished floor): 23 ft<sup>2</sup> (2.1 m<sup>2</sup>) @ 1/4" (6.35 mm).

To achieve a 1/4" (6.35 mm) finished floor, set the screed box at 5/16" (7.94 mm). For a 3/8" (9.53 mm) floor, set the screed box at 7/16" (11.11 mm). If material is too thick, it will be more difficult to level.

Pour out 0.50 gallons (1.89 litres) Eco-Crete Part A into a measuring container. Then, **POUR THE MEASURED PART A INTO THE MORTAR MIXER.** Begin mixing.

**ADD ONE POWDER PIGMENT BAG OR 3 OUNCES OF LIQUID COLORANT TO PART A** and mix for about 15 seconds.

Pour out 0.50 gallons (1.89 litres) Eco-Crete Part B into a measuring container that is separate from the one used with the Part A. Then, **ADD THE MEASURED PART B TO THE PART A** already in the mortar mixer.

**MIX FOR APPROXIMATELY 30 SECONDS** or until thoroughly blended using the mortar mixer.

**GRADUALLY ADD ALL CONTENTS OF A BAG OF ECO-CRETE HF FILLER** into the liquid mixture in the mortar mixer. Blend thoroughly until all particles are wetted out, normally about two minutes. **NOTE:** *It is critical to use the same mixing sequence to ensure color consistency throughout the entire application.*

**POTLIFE AT 75°F:** *Mix only enough material, which can be screeded, troweled and backrolled in a 15-minute period.*

**POUR THE MIXED MATERIAL INTO THE SCREED BOX AND SPREAD MATERIAL** within 3 minutes of mixing.

**TROWEL THE SURFACE LIGHTLY, USING A STEEL FINISH TROWEL** to smooth the surface. Finish trowel strokes should all be in the same direction. Do not overwork the mortar. The material should be troweled to a finished thickness of at least 1/4" to 3/8". For thicknesses greater than 1", add 25 lbs. of clean, dry 3/8" pea gravel to the mixture to help reduce the heat generated during cure. **NOTE:** *If pea gravel is used, it is not a usable surface. It must be overlaid with another layer of the standard mix.*

**IMMEDIATELY ROLL THE SURFACE LIGHTLY IN NO MORE THAN TWO PASSES** with a mohair roller. Excessive rolling or use of loop roller will reduce slip resistance. **NOTE:** *Late or heavy rolling may induce pinholes.*

**LAY ABUTTING EDGES WITHIN 10 MINUTES** to ensure a clean edge. A "wet edge" installation is imperative during large placements to avoid lines and ridges in the finished floor.

**ALLOW COATING TO DRY 24 HOURS** at 75°F (24°C), 50% relative humidity before opening to light traffic. Allow more time at low temperatures, low humidity or for heavier traffic. Full coating properties take 14 days to develop.

## APPLICATION – OPTIONAL COVE

**USE ECO-CRETE CB.** (See appropriate product/system guide for application instructions.)

**NOTE:** Cove installation may be done before placement of the floor; however, a smoother transition is achieved by installing the cove after the floor has been placed.

## TECHNICAL SUPPORT

For any preparation or application questions, please call Tennant technical support at 800-228-4943, option 3 (US & Canada), 800-832-8935 (International).

## DISPOSAL

Dispose of all excess material, packaging and other waste in accordance with federal, state and local regulations.

## MAINTENANCE GUIDELINES

**Allow floor coating to cure at least one week before cleaning by mechanical means (e.g., sweeper, scrubber, disc machine).**

**Care:** Proper maintenance will increase the life and help maintain the appearance of your new Tennant floor coating. Sweep and scrub your new coating regularly, as dirt and dust are abrasive and can quickly dull the finish, decreasing the life of your coating. Remove spills quickly as certain chemicals may stain and could possibly permanently damage the finish.

**Use soft nylon brushes or white pads on your new floor coating. Any brush more abrasive than a soft nylon or white pad can cause premature loss of gloss.**

**Detergent:** Tennant has a full range of detergents--general purpose to heavy duty--for your cleaning needs. For assistance in determining which detergent is right for your facility or for additional technical information call: 800-228-4943, option 3 (US & Canada), 800-832-8935 (International).

**Caution:** Avoid scratching or gouging the surface. All floor coatings will scratch if heavy objects are dragged across the surface.

Do not drop heavy or pointed items on the floor as this may causing chipping or concrete popouts in the case of a weak cap.

Rubber tires can permanently stain the floor coating from plasticizer migration. Plexiglass® between the tire and the floor coating can prevent discoloration.

Rubber burns from quick stops and starts can heat the coating to its softening temperature, causing permanent marking.

**Repair:** Repair gouges or scratches or chip outs as soon as possible to prevent moisture or chemical contamination.

## CONDITIONS OF SALE AND LIMITATION OF WARRANTY AND LIABILITY

Tennant offers a limited warranty on all products. Please see the Tennant Coatings Limited Product Warranty Statement on our website at [www.tennantcoatings.com/warranty](http://www.tennantcoatings.com/warranty). Please contact the Tennant Coatings Technical Support team for additional questions at 800-228-4943, option 3 (US & Canada), 800-832-8935 (International).