

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.

RECOMMENDED SYSTEM			
Application Steps	Tennant Product	Application Thickness mils [mm]	Coverage Rate ft ² /gal [m ² /3.78 L]
Mortar	Eco-Crete HF	1/4" [6.35]	23 [2.1]

OPTIONAL COVE			
Application Steps	Tennant Product	Application Thickness mils [mm]	Coverage Rate ft ² /gal [m ² /3.78 L]
Primer	Eco-Crete TC	13.33 [0.34]	120 [11.1]
Cove	Eco-Crete CB	4" Height [101.6]	35 lin. ft. [10.7 meters]

- **MOISTURE TOLERANCE** – Eco-Crete HF (at 1/4") is good for moisture vapor transmission up to 23 lbs/1,000 ft² in 24 hours as measured by calcium chloride tests or 99% RH, as measured by relative humidity readings.
- **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

TENNANT COATINGS

For First Impressions That Last™

SYSTEM PROPERTIES

Property	Test Method	Results
Bond Strength	ASTM D4541	100% Concrete Failure
Compressive Strength, psi [MPa]	ASTM C579	7,800 [53.78]
Flammability	ASTM D635	Self-extinguishing
Flexural Strength, psi [MPa]	ASTM C580	1,900 [10.34]
Impact Strength, in-lb	ASTM D4226	>160
Resistance to Fungi Growth	ASTM G21	Passes, Rating of 1
Tensile Strength, psi [MPa]	ASTM C307	975 [6.72]
Volatile Organic Compound, VOC, lb/gal [g/L]	ASTM D3960	A+B+C = 0.04 [5]

Testing performed at 70°F [21.1°C]. The data shown above reflects typical results based on laboratory testing under controlled conditions.

CHEMICAL RESISTANCE PROPERTIES

Eco-Crete HF	1 Day	7 Days	Eco-Crete HF	1 Day	7 Days
Acids, Inorganic			Solvents (Ketones & Esters)		
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	Miscellaneous Chemicals		
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*
Acids, Organic			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
Alkalies			Vegetable Shortening	E	E
10% Ammonium Hydroxide	E	E	Water	E	E
50% Sodium Hydroxide	E	E	High Fructose Corn Syrup	E	E
Solvents (Alcohols)			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*
Solvents (Aliphatic)			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*
Solvents (Aromatic)			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.		
Solvents (Chlorinated)			Results are based on 1-day and 7-day spot testing. Coating cured 2 weeks prior to testing.		
Methylene Chloride	P	P			

Registered trademarks: Tide® of Procter and Gamble, Skydrol® of Solutia, Inc., Octave™ of Ecolab® and Coke® of Coca-Cola Co.

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.*

GENERAL PRODUCT INFORMATION

STORAGE:	Materials should be stored indoors between 65°F [18°C] and 80°F [26.6°C].
SHELF LIFE:	Six months from date of manufacture.
PACKAGING OPTIONS / PART NUMBERS:	<p>Eco-Crete HF 1 gallon / 9014428 (½ gallon Part A, ½ gallon Part B, 1 bag C + 1 powder pigment) 10 gallons / 9014432 (5 gallons Part A, 5 gallons Part B, 10 bags C + 10 powder pigments) 500 gallons / 9014435 (250 gallons Part A, 250 gallons Part B, 500 bags C + 500 powder pigments)</p> <p>Eco-Crete CB 9014446 (0.25 gallon Part A, 0.25 gallon Part B, 1 bag C + 1 powder pigment)</p>
OPTIONS:	<p>Powder Pigments: Available in Red, Gray, Dark Gray, Tan, Green, Safety Yellow and Black. Use one powder pigment bag per one-bag mix.</p> <p>Standard Colorants: Tile Red, Canada Gray and Medium Gray are typically used in Eco-Crete HF. Use 3 ounces liquid colorant per one-bag mix. Call Tennant Technical Support for other color options.</p> <p>Cove: A seamless, smooth transition can be created between the flooring and wall using Eco-Crete CB.</p>
LIMITATIONS:	<p>Contamination (Fisheyes): Product may not adhere if oil, silicones, mold release agents or other contaminants are present.</p> <p>Movement: 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>UV/Light Stability: This product is not light stable and will yellow/amber over time unless topcoated with optional UV resistant topcoat.</p> <p>Product Stability: Part A and Part B resins must not be allowed to freeze. If you suspect product has frozen, please call Tennant technical support.</p>

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

<ul style="list-style-type: none">• Protective clothing	<ul style="list-style-type: none">• Spiked shoes	For optional cove Eco-Crete CB:	
<ul style="list-style-type: none">• Screed Box		<ul style="list-style-type: none">• Chalk line	<ul style="list-style-type: none">• Duct tape
<ul style="list-style-type: none">• Mortar mixer – (Baugh, Imer or Kol mixer)		<ul style="list-style-type: none">• Cove strips	<ul style="list-style-type: none">• 4" (106.6 mm) Roller frame w/covers
<ul style="list-style-type: none">• Mohair / Adhesive Roller	<ul style="list-style-type: none">• Roller Assembly	<ul style="list-style-type: none">• Paint brushes	<ul style="list-style-type: none">• Putty Knife
<ul style="list-style-type: none">• Trowel (stainless steel), 4"x12" (101.6 x 304.8 mm) Pool Trowel, Notch Trowel and Margin Trowel		<ul style="list-style-type: none">• Trowel (stainless steel), 3/8" (9.5 mm) or 1/2" (12.7 mm) radius cove 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 - MORTAR - ECO-CRETE HF

COVERAGE RATE: A one bag mix will nominally cover (finished floor): 23 ft² (2.1 m²) @ 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.*

OPTION: *Immediately roll the surface lightly in no more than two passes with a mohair roller. NOTE: This will make the floor much smoother and 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 – ECO-CRETE CB

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.*

COVERAGE RATE:

The cove mix below typically covers 35 lineal feet (10.7 meters) at a height of 4 inches (101.6 mm). The coverage of the Eco-Crete CB could vary depending on its thickness (cove shape). The primer mix will cover 120 ft² (11.1 m²).

APPLICATION – PRIMER – ECO-CRETE TC

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

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 mixing pail, and mix for 15 seconds.

POTLIFE: *Mix only enough material that can be applied within a 15-minute period.*

GRADUALLY ADD ALL CONTENTS OF A BAG OF ECO-CRETE TC FILLER into the liquid mixture and blend thoroughly until all particles are wetted out, normally about 2 minutes.

APPLY PRIMER TO WALL BASE OR EQUIPMENT PADS using a paint brush or roller that will receive cove. Allow primer to dry.

APPLICATION – COVE – ECO-CRETE CB

Pour out 0.25 gallons (0.95 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 0.25 gallons (0.95 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. **POTLIFE:** *Mix only enough material that can be applied within a 15-minute period.*

POUR ONE BAG PART C into the mortar mixer. Mix until uniform (approximately one minute). The resin needs to completely wet out the sand.

POUR THE MIXED MATERIAL along wall or at the base of equipment pads

USE COVE TROWELS to apply, compact and finish material.

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.

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 cause 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. Please contact the Tennant Coatings Technical Support team for additional questions at 800-228-4943, option 3 (US & Canada), 800-832-8935 (International).