

Eco-GPE™

General Purpose Epoxy



Tennant Company, 701 North Lilac Drive, P.O. Box 1452, Minneapolis, MN 55440-1452
800-553-8033 / www.tennantcoatings.com / © Tennant Company 07/28/16

DESCRIPTION:

Clear, two-component, 100% solids epoxy. Applied at 3 mils (0.08 mm) for priming or up to 30 mils (0.76 mm) (1/32 inch) as a build coat. Colors are optional.

USES:

- To level floor after mechanical prep
- Use as a concrete primer before applying another epoxy or urethane.
- Use over other 100% solids epoxies.
- Use as random crack filler when combined with thickening agents.
- Use as a stand-alone coating. (A finish coat of urethane is recommended.)

ADVANTAGES:

- Seals concrete, protecting against dirt and spills
- Will not promote bacterial growth
- Cleans easily, saving detergent, labor and water
- Low VOC (1 g/L). (Complies with SCAQMD VOC regulations.
- **LEED® CREDIT** – LEED Green Building Certification Program credits may be available:
 - **Indoor Environmental Quality**
 - 4.2 Low-Emitting Materials, Paint & Coatings
 - **Material and Resource**
 - 6 Rapidly Renewable Materials

STORAGE: Materials should be stored indoors between 65°F (18°C) and 90°F (32°C).

SHELF LIFE: Minimum 2 years from date of manufacture.

PACKAGING OPTIONS / PART NUMBERS:

Eco-GPE:

12 gallons (45.36 litres) / 9012538

OPTIONS:

Colors: Tennant Colorants may be added to Eco-GPE. Use colorants at a rate of one unit per 3-gallon (11.34 litres) mix of Eco-GPE. Standard Colorants--White, Light Gray, Yellow and Rotunda Red will not impart total hide. Use these colorants at a rate of two units per 3-gallon (11.34 litres) mix of Eco-GPE. (White and Light Gray are only recommended if topcoating with a non-yellowing urethane. Due to possible color inconsistencies, standard colorants Battleship Gray and Medium Gray are only recommended if topcoated.)

Traction: To improve traction in slip hazard areas, use 292 Grit for applications less than 8 mils (0.20 mm). See 292 Grit Product Bulletin.

LIMITATIONS:

Colors: Multiple coats may be needed to achieve complete hide in lighter systems.

UV/Light Stability: This product is not light stable and will yellow/amber over time.

Contamination (Fisheyes): Product may fisheye if oil, silicones, mold release agents or other contaminants are present.

MATERIAL PROPERTIES (LIQUID):

| Property | Test Method | Results |
|---|-------------|---|
| Density <i>lb/gal / kg/L</i> | ASTM D1475 | A – 11.36 / 1.36 B – 8.52 / 1.02 A/B – 10.42 / 1.25 |
| Viscosity, <i>cps</i> Brookfield | ASTM D2196 | A - 5000-6000 B – 100-300 A/B – 800-1200 |
| Volatile Organic Compound - VOC <i>lb/gal (g/L)</i> | ASTM D3960 | Mixed A + B 0.01 (1) |

CURED COATING PROPERTIES (DRY FILM):

| Property | Test Method | Results |
|---|-------------------------------|--|
| Abrasion Resistance, <i>mg loss</i> Taber Abraser | ASTM D4060 | 81 |
| Adhesion to Substrate / Bond Strength | ASTM D4541 | 1232 psi (failed at concrete) |
| Adhesion to Substrate / Bond Strength | ASTM D7234 | >480 psi (max psi machine can register) |
| Coefficient of Friction - COF James Friction Tester | ASTM D2047 | 0.50 |
| Wet Static Coefficient of Friction – BOT 3000 | ANSI/NSFI B101.1 | 1.0 |
| Compressive Strength, <i>psi (MPa)</i> | ASTM D695 | 9,000 (62.053) |
| Tensile Strength, <i>psi (MPa)</i> | ASTM D2370 | 5,000 (34.474) |
| Percent Elongation | ASTM D2370 | 4 |
| Shore D Hardness | ASTM D2240 | 80-85 @ 0 sec 75-80 @ 15 sec |
| Thermal Stability / Heat Resistance Tested on steel panel (5 hours at 158°F) | MIL-D-3134J, Section 4.6.3 | No slip/flow, no softening or change in appearance |
| Water Absorption (24-hour immersion, resin only) | ASTM D570 | 0.4% increase in weight |

CS-17 Taber Abrasion Wheel, 1,000 gram load, 1,000 revolutions
Testing performed at ambient conditions unless stated otherwise.

APPLICATION CHARACTERISTICS:

Coverage rate will depend upon application coating thickness as well as the texture and porosity of the concrete. A gallon (3.78 litres) of Eco-GPE will cover:

| | |
|--|-------------------|
| Coverage Rate, <i>ft²/gal (m²/3.78 L)</i> | 53-535 (4.9-49.7) |
| Application Thickness, <i>wet/dry mils (mm)</i> | 3-30 (0.08-0.76) |

CHEMICAL RESISTANCE

| CLEAR - ECO-GPE | 1 / 7 Days* | Splash / Spill |
|---|----------------|-------------------|
| Acids, Inorganic | | |
| 10% Hydrochloric Acid | E / G | E |
| 30% Hydrochloric Acid (Muriatic) | F / F | G |
| 10% Nitric Acid | G / G | G |
| 50% Phosphoric Acid | F / F | F |
| 37% Sulfuric Acid (Battery Acid) | G / G | G |
| Acids, Organic | | |
| 10% Acetic Acid | F / F | F |
| 10% Citric Acid | G / G | G |
| Oleic Acid | E / G | E |
| Alkalies | | |
| 10% Ammonium Hydroxide | E / G | E |
| 50% Sodium Hydroxide | E / E | E |
| Solvents (Alcohols) | | |
| Ethylene Glycol (Antifreeze) | E / E | E |
| Isopropyl Alcohol | E / G | E |
| Methanol | G / F | G |
| Solvents (Aliphatic) | | |
| d-Limonene | E / E | E |
| Jet Fuel - JP-4 | E / G | E |
| Gasoline | E / F | E |
| Mineral Spirits | E / E | E |
| Solvents (Aromatic) | | |
| Xylene | E / G | E |
| Solvents (Chlorinated) | | |
| Methylene Chloride | P / P | P |
| Solvents (Ketones & Esters) | | |
| Methyl Ethyl Ketone (MEK) | F / P | G |
| Propylene Glycol Methyl Ether Acetate (PMA) | G / F | E |
| Miscellaneous Chemicals | | |
| 20% Ammonium Nitrate | E / E | E |
| Brake Fluid | F / F | F |
| Bleach | F / G | F |
| Motor Oil (SAE 30) | E / F | E |
| Skydrol® 500-B4 | E / F | E |
| Skydrol® LD4 | F / F | F |
| 20% Sodium Chloride | E / E | E |
| 1% Tide® Laundry Soap | E / E | E |
| 10% Trisodium Phosphate | E / E | E |
| Jet Fuel Phillips "Blue" Aviation Gasoline | E / E | E |
| Unleaded Gas + Ethanol | E / E | E |

*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.
 G - Good (Limited Adverse Effect--such as softening or staining) - Use for short-term exposure only.
 F - Fair (Moderate Adverse Effect) - Not recommended.
 P - Poor (Unsatisfactory) - Little or no resistance to chemical.
 Note: Reduced chemical resistance and increased staining is possible in pigmented versions of this system.
 Tide® is a registered trademark of Proctor and Gamble.
 Skydrol® is a registered trademark of Monsanto.

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

PRELIMINARY FLOOR INSPECTIONS

CHECK THE CONCRETE: Concrete must be structurally sound and free of curing membrane, paint or other sealer. If you suspect that the concrete has been previously sealed, call Tennant Company, technical support for further instructions.

CHECK FOR MOISTURE: Concrete must be dry before application of this floor coating material. Concrete moisture testing must occur. Calcium chloride testing or in-situ relative humidity testing is recommended. Readings must be below 3 pounds per 1,000 square feet (1.5 kg per 150m²) over a 24-hour period on the calcium chloride test or below 75% relative internal concrete humidity. Test methods can be purchased at www.astm.org, see ASTM F1869 or F2170, respectively or follow instructions from the suppliers of these tests. If moisture issues are present, the use of Tennant Eco-MVR may be a consideration; see Eco-MVR System Guide and/or call Tennant Company Technical Support for further instructions.

NOTE: Although testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly and/or you suspect you may have concrete contamination from oils, chemical spills or excessive salts.

CHECK THE TEMPERATURE AND HUMIDITY: Floor temperature and materials should be between 65°F (18°C) and 90°F (32°C). Humidity must be less than 80%. **DO NOT** coat unless floor temperature is more than five degrees over the current, local dew point.

APPLICATION EQUIPMENT

- Protective clothing
- Jiffy® Mixer Blade - [Tennant Part No. 08643-1 (small unit) or 08643-5 (large unit)]
- Slow speed drill (500 rpm or less)
- 18-24" (46-61 cm) Flat rubber squeegee
- 18-24" (46-61 cm) Notched rubber squeegee
- Roller Assembly
- Shed Resistant, 3/8" (10 mm) Nap Rollers
- Spiked shoes
- 60 grit sandpaper [Tennant Part No. 65449]
- 80 grit sandpaper [Tennant Part No. 65450]
- 100 grit sandpaper [Tennant Part No. 65451]

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.

One of the following preparation methods may be used:
EasyPrep™: With 100 grit concrete tool, coating system must be <15 mils. With 25/35 grit concrete tool, coating system must be 10-25 mils.

Diamond Grinding: Coating system thickness varies with the type of diamond used. Sweep and vacuum to remove fine dust.

Steel Shot Blast: Coating system must be >16 mils. Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust.

Scarify: Coating system must be >25 mils. Sweep to remove large debris and vacuum to remove fine dust.

JOINTS: Depending on the preference of the facility owner, joints may or may not be filled. If the joints are filled, non-moving joints, i.e. contraction or control joints, can be hard filled with thickened, 100% solids epoxy or with a semi-rigid joint filler such as Eco-PJS™ or Eco-EJF™ Ultra. Construction joints less than one inch wide may also be filled with Eco-PJS. Isolation or expansion joints must be filled with a flexible material designed for this purpose. Coating applied over filled joints will crack if there is concrete movement.

APPLICATION - PRIMER COAT

A thin coat of primer will wet out concrete, help seal off concrete pores and minimize outgassing bubbles. Apply a tight coat of primer with a clean, flexible flat blade squeegee. Backrolling is not recommended. There should be no mil build over the high spots of the concrete.

COVERAGE RATE will depend upon coating thickness. Much of this will soak into porous concrete. A gallon (litre) of Eco-GPE will cover:

535 ft² (49.7 m²) @ 3 mils (0.08 mm) wet/dry film
400 ft² (37.2 m²) @ 4 mils (0.10 mm) wet/dry film
321 ft² (29.8 m²) @ 5 mils (0.13 mm) wet/dry film

PREMIX PART A using a Jiffy® mixer blade and slow speed drill to evenly disperse filler and additives. Pour out 2 gallons (7.56 litres) into a measuring container. Then, pour the measured Part A into a mixing pail.

COLORS: Premix Tennant Colorants to ensure uniform color. Colorant is added to the Part A and mixed using a Jiffy® mixer blade and slow speed drill. **NOTE:** *When using colorant in the bulk units, add the colorant to the Part A that has been measured into the "mixing pail".*

ADD ECO-GPE PART B TO PART A (3 GALLONS / 11.34 LITRES TOTAL MIX). Pour out 1 gal (3.78 litres) 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. **POTLIFE:** *Mix only enough material which can be applied within the work time (time between the addition of Part B to Part A and the completion of all application actions). Check the following chart for work times at various temperatures. For smaller quantities, use 2 parts PART A to 1 part PART B by volume.*

APPROXIMATE WORK TIME (minutes) - °F (°C)

| | | | | |
|------------------|------------------|------------------|------------------|------------------|
| 65 (18.3) | 70 (21.1) | 75 (23.9) | 80 (26.7) | 90 (32.2) |
| 35 | 25 | 20 | 15 | 10 |

MIX FOR 2 MINUTES using a Jiffy® mixer blade and slow speed drill. (Failure to do so could result in lower/diminished coating properties.)

IMMEDIATELY POUR ALL OF THE MIXED MATERIAL onto the floor in a single bead.

PUSH THE FLAT SQUEEGEE at an even speed with sufficient down pressure to apply the thinnest coat.

START THE SECOND AND REMAINING PASSES by pushing material parallel to the first stroke. Hold the bead of material near the center of the bar. **NOTE:** *Eco-GPE applied thin may "bridge" holes and cracks momentarily before soaking in--make sure the previously squeegeed area*

is overlapped (halfway). **NOTE:** *The use of spiked shoes will allow freedom of movement on the wet floor.*

TO REDUCE OUTGASSING BUBBLES, it is best to wait until the primer has set up enough to walk on before applying a build coat of Eco-GPE. The primer does not need to be sanded if coated within 24 hours at floor temperatures 65°F-90°F (18°C-32°C).

If primer is not coated within 24 hours, it must be sanded with 60 grit paper. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating.

APPLICATION - BUILD COAT

COVERAGE RATE will depend upon required thickness. A gallon (litre) of Eco-GPE will cover:

160 ft² (14.9 m²) @ 10 mils (0.25 mm) wet/dry film
107 ft² (9.9 m²) @ 15 mils (0.38 mm) wet/dry film
80 ft² (7.4 m²) @ 20 mils (0.51 mm) wet/dry film

NOTE: *Total Eco-GPE (prime and build coat) should not exceed 35 mils (0.89 mm).*

REPEAT STEPS used for mixing and spreading of the primer coat. A notched squeegee can be used to increase the thickness applied.

*1/16" (1.60 mm) notched squeegee to apply 10-15 mils (0.25-0.38 mm)

*1/8" (3.18 mm) notched squeegee to apply 15-20 mils (0.38-0.51 mm)

*1/4" (6.35 mm) notched squeegee to apply more than 20 mils (0.51 mm)

*These guidelines were arrived at by using new squeegees on smooth concrete with little applied pressure. The application rate is affected by worn squeegees, applied pressure and texture of the concrete.

Immediately after the Eco-GPE is applied and there is room to roll, a second person will **BACKROLL THE MATERIAL** with a 3/8" (10 mm) roller to a smooth and uniform appearance. **NOTE:** *Get off the Eco-GPE as soon as possible.*

ALLOW COATING TO CURE 24 hours at 75°F (24°C) before opening to light traffic. Allow more time at low temperatures or for heavier traffic. Full coating properties take 14 days to develop.

APPLICATION OF ADDITIONAL COATINGS

If Eco-GPE is being topcoated with a Tennant urethane except Eco-HPS™ and Eco-HPS™ 100 at floor temperatures of 65-90°F (18-32°C), it does not need to be sanded if applied within 24 hours. **NOTE:** *This is a Tennant solution only, DO NOT try this with competitive epoxies.*

SANDING REQUIRED

Eco-GPE must be thoroughly sanded with 100 grit paper if applying Eco-HPS or Eco-HPS 100 (see chart below).

APPROXIMATE SAND TIME (hours) - °F (°C)

| | | | | |
|------------------|------------------|------------------|------------------|------------------|
| 65 (18.3) | 70 (21.1) | 75 (23.9) | 80 (26.7) | 90 (32.2) |
| 20 | 17 | 14 | 12 | 8 |

If applying other Tennant urethanes after 24 hours, use 80 grit paper except for gloss urethanes such as WearGuard™-420 and Tennant CRU, use 100. The use of

more aggressive paper will introduce deep grooves that will not be covered by a single, thin coat of urethane; swirl marks will be particularly evident if the topcoat is glossy. We recommend thorough sanding with a swing-type buffer so that multiple scratch marks cause an obvious gloss loss on all areas (depressions will remain shiny), and the floor is uniformly dulled. The ability to see individual scratch marks is an indication that sanding is not adequate. Scrub with detergent and rinse with clean water before coating and tack rag to remove fine dust.

TECHNICAL SUPPORT

For any preparation or application questions, please call Tennant technical support at 800-228-4943, option 4 (US & Canada), 800-832-8935 (International).

DISPOSAL

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

PLEASE SEE MATERIAL SAFETY DATA SHEET (MSDS) FOR SAFETY AND PRECAUTIONS.

USE PRODUCT AS DIRECTED.

KEEP OUT OF THE REACH OF CHILDREN.

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 4 (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

This warranty applies to all Specialty Surface Coatings, with the following exceptions: Eco-Hard-N-Seal™, Eco-EDP™ (Electrostatic Dissipative Primer), Eco-EDE™ (Electrostatic Dissipative Epoxy), and SDS™ (Static Dissipative System). These products have a separate warranty policy.

Tennant Company warrants its Specialty Surface Coatings to be free from defective manufacture, improper formulation, and defective ingredients. Warranty covers replacement of materials only.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

In no event shall Tennant or Seller be liable for any incidental, consequential, or special damages arising out of the use of Tennant Specialty Surface Coatings. **THE ONLY REMEDY OF THE USER OR BUYER, AND THE ONLY LIABILITY OF TENNANT AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES, OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY, OR OTHERWISE) SHALL BE REPLACEMENT OF THE PRODUCT OR, AT THE ELECTION OF TENNANT OR SELLER, RETURN OF THE PURCHASE PRICE.**

No representative of Tennant has authority to give any other warranty or assume other liability.

The presence of a Tennant employee during the application of Tennant's Specialty Surface Coatings does not extend or alter the warranty or limitations in any manner whatsoever.