

Eco-MPE™

Multi-Purpose Epoxy



Tennant Company (Headquarters)
701 North Lilac Drive, P.O. Box 1452
Minneapolis, MN 55440-1452
800-553-8033 / www.tennantco.com

Tennant Company (Australia)
Head Office: Unit 2 Block Y, 391 Park Road, P.O. Box 116
Regents Park NSW 2143
Sales: 1800 226 843 / www.tennantco.com

© Tennant Company 02/09/09

Page 1 of 4

DESCRIPTION:

Clear, two-component, 100% solids epoxy. Applied at 3 mils (76.2 microns) for priming or up to 30 mils (762 microns) (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
- Cleans easily, saving detergent, labor and water
- Low VOC (4 g/L). (Complies with SCAQMD VOC regulations. LEED credits available.)

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-MPE:

0.75 gallons (2.84 litres) / 370501=A, 370502=B
3.0 gallons (11.34 litres) / 370503
15 gallons (56.78 litres) / 370650

- BULK - Contractor Only -

165 gallons (624.59 litres) / 9004758

OPTIONS:

Colors: Tennant Colorants may be added to Eco-MPE. Use colorants at a rate of one unit per 3-gallon (11.34 litres) mix of Eco-MPE. 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-MPE. (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 (203.2 microns). 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
Flash Point °F/C Seta Closed Cup	ASTM D3278	A - >200 / 93 B - >200 / 93
Percent Solids, by wt	ASTM D2369	A - 99.4 B - 99.8
Density lb/gal / kg/L	ASTM D1475	A - 9.22 / 1.11 B - 8.39 / 1.00 A/B - 8.94 / 1.07
Viscosity, cps Brookfield	ASTM D2196	A - 700-1000 B - 350-550 A/B - 500-700
Volatile Organic Compound - VOC lb/gal (g/L)	ASTM D3960	Mixed A + B 0.04 (4)

CURED COATING PROPERTIES (DRY FILM):

Property	Test Method	Results
Abrasion Resistance, mg loss Taber Abraser	ASTM D4060	83.1*
Coefficient of Friction - COF James Friction Tester	ASTM D2047	0.59-0.62
Compressive Strength, psi (MPa)	ASTM D695	13,500 (93.079)
Tensile Strength, psi (MPa)	ASTM D2370	8,000 (55.158)
Percent Elongation	ASTM D2370	5
Shore D Hardness	ASTM D2240	80-85 @ 0 sec 75-80 @ 15 sec

*Independent Lab Test Result
CS-17 Taber Abrasion Wheel, 1,000 gram load, 1,000 revolutions
Results are based on conditions at 77°F (25°C), 50% relative humidity.

APPLICATION CHARACTERISTICS:

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

Coverage Rate, ft ² /gal (m ² /L)	53-535 (1.3-13.1)
Application Thickness, wet/dry mils (microns)	3-30 (76.2-762)

CHEMICAL RESISTANCE

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

Based on 1-day and 7-day spot testing on concrete.
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.

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 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.

THIN FILM APPLICATIONS (3-10 mils / 76.2-254 microns):
Acid Etch (bare concrete): Detergent scrub and rinse with clean water.

Tennant Eco-Prep™ or Diamond Grind: Scrub with Tennant Acid Wash and rinse with clean water (results of diamond grinding may vary depending on technique and the hardness of the concrete. Additional mils may be required).

Light Blast: Use magnetic broom to remove excess shot, sweep to remove large debris and vacuum to remove fine dust.

THICK FILM APPLICATIONS (11-30 mils / 279.4-762 microns):

Steel Shot Blast: 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.

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™. 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 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-MPE will cover:

- 535 ft² (13.1 m²) @ 3 mils (76.2 microns) wet/dry film
- 400 ft² (9.8 m²) @ 4 mils (101.6 microns) wet/dry film
- 321 ft² (7.9 m²) @ 5 mils (127 microns) wet/dry film

PREMIX PART A using a Jiffy® mixer blade and slow speed drill. (This is required for both 3-gallon (11.34 litres) and full-fill 5-gallon (18.9 litres) units.) For full-fill 5's (18.9 litres), pour out 2 gal (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-MPE PART B TO PART A (3 GALLONS / 11.34 LITRES TOTAL MIX). For full-fill 5's (18.9 litres), 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)
40	30	25	20	15

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-MPE 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-MPE. 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 - (IF REQUIRED)

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

- 160 ft² (3.9 m²) @ 10 mils (254 microns) wet/dry film
- 107 ft² (2.6 m²) @ 15 mils (381 microns) wet/dry film
- 80 ft² (1.9 m²) @ 20 mils (508 microns) wet/dry film

NOTE: *Total Eco-MPE (prime and build coat) should not exceed 35 mils (889 microns).*

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

- *1/16" (1.59 mm) notched squeegee to apply 10-15 mils (254-381 microns)
- *1/8" (3.18 mm) notched squeegee to apply 15-20 mils (254-508 microns)
- *1/4" (6.35 mm) notched squeegee to apply more than 20 mils (508 microns)

*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-MPE 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-MPE 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-MPE 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-MPE must be thoroughly sanded 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)
24	20	16	12	8

Eco-MPE must also be sanded if applying other Tennant urethanes after 24 hours. Use 80 grit paper except for Eco-HPS, Eco-HPS 100, WearGuard™-CRU and WearGuard™-CRU 250—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 ext. 6075 (1800 226 843 Aust).

DISPOSAL

Dispose 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. Polypropylene or abrasive bristle (Tynex®) brushes 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: 800-553-8033 US (1800 226 843 Aust).

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.