

Eco-RCE™

Rapid Cure Epoxy



DESCRIPTION – Eco-RCE is a two-component, rapid cure high-solids epoxy designed for experienced applicators.

ADVANTAGES

- Reduces downtime at ambient conditions
- Reasonable cure time at cooler conditions
- **LEED® CREDIT** – LEED Green Building Certification Program credits may be available:
 - **Indoor Environmental Quality**
 - 4.2 Low-Emitting Materials, Paint & Coatings

ENVIRONMENTALLY & USER FRIENDLY

- Reduced solvent means less evaporation and less waste.
- Complies with SCAQMD VOC regulations--<100 g/L.

PRIMARY APPLICATIONS

Primer and Build Coat	Seed coat for full broadcast flake and quartz floors
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GENERAL PRODUCT INFORMATION

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 in unopened original product containers.
PACKAGING OPTIONS / PART NUMBERS:	Eco-RCE 15 gallons (56.7 litres) / 378107 (Contractor only)
LIMITATIONS:	<p><i>Colors:</i> Colors are not recommended in Eco-RCE, due to potential interactions which may cause cosmetic defects in the coating film.</p> <p><i>UV/Light Stability:</i> This product is not light stable and will yellow/amber more quickly than a standard epoxy. Eco-RCE should not be used for sealing and topcoating decorative floors or as a standalone coating.</p> <p><i>Contamination (Fisheyes, Adhesion):</i> Products may fisheye and/or have reduced adhesion if oil, silicones, mold release agents or other contaminants are present.</p> <p><i>Appearance:</i> The reduced work time may not allow the release of entrained air and/or Eco-RCE to level as well as a standard epoxy resulting in an orange peel texture that a thin-mil coating will not hide.</p> <p><i>Blush Effect:</i> Eco-RCE may exhibit amine-blush if applied at relative humidity >70%. Amine-blush will affect adhesion quality of additional coatings applied on top. Consult Tennant Coatings Technical Support for further questions about amine-blush.</p>

MATERIAL PROPERTIES (LIQUID)

Property	Test Method	Results
Volatile Organic Compound – VOC, g/L	EPA–Method 24	≤100 @ 10 mils or greater
Density - lb/gal / kg/L	ASTM D1475	A - 9.46 / 1.135 B - 8.22 / 0.986 A/B - 9.04 / 1.085
% solids (nonvolatiles)	ASTM D2369, Method E	≥ 90.79 @ 10 mils or greater
Mix ratio by volume		2 parts A to 1 part B

CURED COATING PROPERTIES (DRY FILM)

Property	Test Method	Results
Tensile Strength, psi (MPa)	ASTM D2370	5,200 (35.9)
Percent Elongation	ASTM D2370	4
Shore D Hardness	ASTM D2240	80-85 @ 0 sec 75-80 @ 15 sec

Test results based on conditions of 77°F.

APPLICATION COVERAGE RATE

To meet **100 g/L VOC per EPA Method 24**, Eco-RCE must be applied using one or the other minimum mil thicknesses shown below:

- A minimum of **10 mils** in one single coat.
 - 10 mils** → 160 ft² coverage per gallon wet/dry film
- A minimum of **11 mils** total combined thickness applied in **two coats** within 7 hours of each other, with neither two coats being applied less than **3 mils**.
 - 3 mils** → 535 ft² coverage per gallon wet/dry film
 - 8 mils** → 200 ft² coverage per gallon wet/dry film

TENNANT COATINGS

For First Impressions That Last™

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 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 ft² (1.5 kg per 92.9m²) 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 manufacturer's instructions. If moisture issues are present, the use of a moisture mitigation system may be a consideration. Please call Tennant Company Technical Support for further information / 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 (32.2°C). **Humidity must be less than 70%** at time of application as it may result in amine-blush. Amine-blush can affect adhesion quality of additional coatings applied on the top. Consult Tennant Company Technical Support for further questions about amine-blush. **DO NOT** coat unless floor temperature is more than five degrees over the current, local dew point.

APPLICATION EQUIPMENT

<ul style="list-style-type: none">• Protective clothing• Jiffy® mixer blade [Tennant Part # 08643-5 (large unit)]	<ul style="list-style-type: none">• Shed resistant 3/8" (10 mm) nap roller NOTE: <i>Using thicker nap rollers reduces the work time, especially at warmer temperatures.</i>
<ul style="list-style-type: none">• Slow speed drill (500 rpm or less)	<ul style="list-style-type: none">• Spiked shoes
<ul style="list-style-type: none">• 18-24" (16-61 cm) Flat rubber squeegee	<ul style="list-style-type: none">• 80 grit sandpaper (Tennant Part No. 65450)
<ul style="list-style-type: none">• 18-24" (16-61 cm) Notched rubber squeegee	<ul style="list-style-type: none">• 100 grit sandpaper (Tennant Part No. 65451)
<ul style="list-style-type: none">• Roller assembly (18")	<ul style="list-style-type: none">• 120 grit sandpaper

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.)

RECOAT APPLICATION

If recoating a previously existing floor coating, thoroughly inspect coating to make sure it is bonded well to the concrete. The presences of blisters and peeling may be evidence of high moisture or contamination problems in the concrete. If the existing coating is a concrete sealer, paint, or curing membrane, then it must be fully removed before coating with Eco-RCE. Refer to "Preliminary Floor Inspections" section above for more details. Thorough floor preparation must be completed before recoating with Eco-RCE. Sand existing floor coating fully to a uniform dull appearance using 80 grit sandpaper. 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. When recoating with Eco-RCE, apply a minimum **10 mils**, ensuring variations in floor surface texture and profile will be covered. Eco-RCE is not designed to be use as a standalone coating, and should be coated over with a different Tennant epoxy or urethane. For mixing and application instructions of Eco-RCE, refer to Bare Concrete Application Step #2. For applying coatings on top of the Eco-RCE, refer to the section regarding "Applying Additional Coatings" on page 3.

BARE CONCRETE PREPARATION OPTIONS

Ensure concrete is free of dirt, grease, oil, or other contaminant. Certain types of contaminant may interfere with coating adhesion and cause fisheyes or defect in the coating. Scrub with detergent, rinse with clean water, and allow to fully dry.

Concrete Preparation Options for Thin to Medium Film Applications

Diamond Grind: (results of diamond grinding may vary depending on technique and the hardness of the concrete. Additional mils may be required). Sweep to remove large debris and vacuum to remove fine dust.

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

Concrete Preparation options for Thick-Film Applications

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.

Filling 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 epoxy or with a semi-rigid joint filler such as Eco-PJF™ or Eco-EJF™. Construction joints less than one inch wide may also be filled with Eco-PJF. Isolation or expansion joints must be filled with a flexible material designed for this purpose. **Coating applied over filled joints may crack if there is concrete movement.**

BARE CONCRETE APPLICATION

To minimize outgassing bubbles on bare concrete, it is recommended that Eco-RCE be applied in two steps. Apply the first coat of the primer with at least 3 mils (535 ft²) coverage per gallon wet/dry film.

APPLICATION STEP #1

Before use, PREMIX Eco-RCE Part A in the product container using a Jiffy® mixer blade and slow speed drill to ensure a uniform product. From the product container, measure out 2-parts by volume of Eco-RCE Part A into a measuring container. Then, pour the measured Part A into a mixing pail.

From the Eco-RCE Part B product container, measure out 1-Part B by volume 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.*

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

<u>65 (18.3)</u>	<u>70 (21.1)</u>	<u>75 (23.9)</u>	<u>80 (26.7)</u>	<u>90 (32.2)</u>
15	10	< 10	NR	NR

NR = Not Recommended

MIX FOR 1 MINUTE 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 down pressure. The squeegee should be pushed to apply maximum pressure and therefore 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 and push at an even speed with slight down pressure. **NOTE:** *Epoxy applied thin may "bridge" holes and cracks momentarily before soaking in—make sure the previously squeegeed area is overlapped (halfway).*

To Reduce Outgassing Bubbles, it is best to wait until the primer has set up enough to walk on before applying the second coat. Approximate "walk-on" times are listed below:

APPROXIMATE WALK-ON TIME (hours) - °F (°C)

<u>65 (18.3)</u>	<u>70 (21.1)</u>	<u>75 (23.9)</u>
7	5	< 5

If the second coat is not applied **within 7 hours**, coating VOC may exceed **100 g/L**. If it is not coated within **24 hours**, it must be thoroughly sanded to ensure proper adhesion of additional coats. See section "Sanding Requirements" for additional information.

APPLICATION STEP #2

Repeat Mixing procedure note above in **Step #1**. Adjust mix quantity to match the desired coverage rate. Step #2 requires back-rolling to obtain a uniform coverage rate. Apply a minimum of **8 mils** in Step #2 to cover up remaining texture differences on the floor. **Note:** The total combined thickness of step#1 and step #2 should not exceed 35 mils.

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

Use a notched squeegee to spread the coating out over the floor, using the same method noted for Step #1.

*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 (381-508 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-RCE is spread out and there is room to roll, a second person will **BACKROLL THE MATERIAL** with a 3/8" roller to a smooth and uniform appearance.

APPLYING ADDITIONAL COATINGS (Other Tennant urethanes or epoxies)

Eco-RCE is not designed to be a standalone coating, and should be coated over with a Tennant urethane or epoxy. With the exception of Eco-HPS™ 100, Eco-RCE can be coated over **without** sanding the floor within 24 hours of last Eco-RCE application when cured in the range of 65-80°F (18-27°C). **NOTE:** *This is a Tennant solution only, DO NOT try this with competitive epoxies.*

If applying Eco-HPS™ 100, the floor must be sanded before installation regardless of the recoat window to obtain proper adhesion and appearance. (See next section).

SANDING REQUIREMENTS

After 24 hours of recent application, Eco-RCE must be sanded if applying additional coats of Tennant urethanes or epoxies. For Eco-HPS 100, WearGuard™-240, and WearGuard™-ITS, use 100 grit sandpaper, and for Tennant CRU use 120 grit. The use of more aggressive paper may leave sanding swirl marks due to high gloss of these coatings.

For all other coatings, use 80 grit sandpaper. 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 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

This warranty applies to all Specialty Surface Coatings, excluding Eco-Hard-N-Seal™ and all static control products (both dissipative and conductive). The excluded products have a different warranty.

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.