

Eco-ECP™ / Eco-EDP™
Electrostatic Conductive Primer
Electrostatic Dissipative Primer

Eco-ECT™
Electrostatic Control Epoxy



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Page 1 of 3

Division 9

Section - Resinous Flooring

PART 1 - GENERAL

1.01 Summary

- A. Eco-ECT™ is a two-component, 100% solids epoxy. Applied at 15-20 mils (381-508 microns) over 3-5 mils (76.2-127 microns) of Eco-ECP/Eco-EDP, the required primer(s). An electrically insulating coat of Tennant epoxy is first applied directly to the concrete. The system Eco-EDP/ECT has low VOC (99 g/L / 13 g/L) respectively. (Complies with SCAQMD VOC regulations. LEED credits available.)

1.02 Performance Requirements

- A. See manufacturer's product bulletin for specific material, cured coatings and a complete list of chemical resistant properties.
 - 1. Chemical Resistance: Good chemical resistance to 30% Hydrochloric Acid (Muriatic) and excellent chemical resistance to 50% Sodium Hydroxide with no adverse effects, based on 7-day spot testing on concrete.

1.03 Submittals

- A. Product Data: Submit manufacturer's product data, including physical properties, chemical resistance, surface preparation and application instructions.
- B. Submit list of five projects similar in nature, which have been installed by applicator during the last five years, identified with project name, location, name of owner's representative, their phone number and date.
- C. Submit manufacturer's standard warranty and applicator's warranty.

1.04 Quality Assurance

- A. Applicator Qualifications:
 - 1. A minimum of three years' experience in the application of coatings or resurfacers to concrete floors.
 - 2. A minimum of ten jobs or 1,000,000 square feet (92,903 m²) of successful applications.
- B. Pre-Application Meeting: Convene a pre-application meeting 2 weeks before the start of application of floor coating system. Require attendance of parties directly affecting work of this section, including the Contractor, Architect, Applicator and Manufacturer's Representative. Review the surface preparation, application, cleaning, protection and coordination with other work.

1.05 Delivery, Storage and Handling

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Store materials in accordance with manufacturer's instructions.
 - 1. Store materials in dry, enclosed area with adequate protection from moisture.
 - 2. Keep containers sealed until ready for use.
 - 3. Storage Temperature: 65°F (18°C) and 90°F (32°C).

1.06 Warranty

- A. Written manufacturer's warranty covering materials only. Applicator to provide application warranty.

PART 2 - PRODUCTS

2.01 Materials

- A. Electrically Insulating Primer: Tennant Eco-MPE™ - Multi-Purpose Epoxy. A two-component epoxy.
1. Volatile Organic Compound (VOC), ASTM D3960
 1. 0.04 lb/gal or 4 g/L
 2. Tensile Strength, ASTM D2370
 1. 8,000 psi or 55,200 kPa
 3. Percent Elongation, ASTM D2370
 1. 5
- B. Primer: Tennant Eco-ECP - Electrostatic Conductive Primer. A two-component epoxy.
1. Volatile Organic Compound (VOC), ASTM D3960
 1. 2.05 lb/gal or 246 g/L
 2. Percent Solids, ASTM D2369
 1. Part A – 70.61%
 2. Part B - 100%
 3. Combined A/B – 77.06
- OR**
- Primer: Tennant Eco-EDP - Electrostatic Dissipative Primer. A two-component epoxy.
1. Volatile Organic Compound (VOC), ASTM D3960
 1. 0.82 lb/gal or 99 g/L
 2. Percent Solids, ASTM D2369
 1. Part A – 87.74%
 2. Part B – 99.91%
 3. Combined A/B – 90.95
- C. Topcoat: Tennant Eco-ECT - Electrostatic Control Epoxy. A filled two-component epoxy.
1. Volatile Organic Compound (VOC), ASTM D3960
 1. 0.11 lb/gal or 13 g/L
 2. Percent Solids, ASTM D2369
 1. Part A – 98.29%
 2. Part B – 99.81%
 3. Combined A/B – 98.75%
 3. Compressive Strength, ASTM D695
 1. 13,500 psi or 93,150 kPa
 4. Tensile Strength, ASTM D2370
 1. 8,000 psi or 55,200 kPa (resin only)
 5. Surface Resistance @ Point to Point / Point to Ground (ESD Association), ANSI/ESD 7.1-2005
 1. Eco-ECP/ECT = 1.0×10^5 - $<1.0 \times 10^6$ ohms
 2. Eco-EDP/ECT = 1.0×10^5 - $<1.0 \times 10^9$ ohms
 6. Maximum Standing Voltage at 0% prob. w/ESD Footwear
 1. Eco-ECP/ECT = <0.5 seconds
 2. Eco-EDP/ECT = <0.5 seconds
 7. Body Voltage Decay 1000V - <50 V (with ESD Footwear)
 1. <0.5 seconds
- D. Colorant: Tennant Colorants
1. Tennant Colorants must be added to Eco-ECT. Use Canada Gray 100, Sandy Beige, Tile Red, Smoke Blue or Ivy Green.

PART 3 - EXECUTION

3.01 Examination

- A. Examine concrete surface to receive floor coating system. Notify the Architect if surface is not acceptable. Do not begin surface preparation or application until unacceptable conditions have been corrected.
- B. Allow concrete substrate to cure a minimum of 30 days.

- C. **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.
- D. **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.

3.02 Preparation

- A. Prepare surface in accordance with manufacturer's instructions.
 - 1. Cleaning: Scrub with Tennant detergent and rinse with clean water to remove surface dirt, grease and oil.
 - 2. Remove coating or membrane from existing concrete with one of the following methods:
 - 1. Shotblast with ≥ 330 shot
 - 2. Diamond Grind.
 - 3. Scarify
 - 3. Use Magnetic broom to remove excess shot.
 - 4. Sweep then vacuum concrete surface.

3.03 Application

Electrical Grounding - Before applying Eco-ECP/Eco-EDP, a grounding system that meets the customer's specifications needs to be connected to the common ground of the facility.

- A. Apply floor coating system in accordance with manufacturer's instructions.
 - 1. Assemble squeegees and rollers; clean rollers to remove residual lint.
 - 2. Insulating Primer: Eco-MPE - Multi-Purpose Epoxy. (For tighter schedules that call for applying Eco-EDP as soon as the epoxy is set, Eco-RCE™, Eco-RCE™/F or Eco-RCE™/M can also be used as the insulator. Use Eco-MPE if waiting overnight.)
 - 1. Mix components together.
 - 2. Mix only enough material which can be applied within 25 minutes.
 - 3. Apply Eco-MPE thick enough to minimize the prep profile.
 - 4. Allow coating to cure no longer than 24 hours at 75°F (24°C) and 50% relative humidity. **NOTE: DO NOT sand the epoxy insulator; as sanding will not result in a profile adequate for adhesion of a coating >10 mils (254 microns).**
 - 3. Primer: Eco-ECP / Eco-EDP – Electrostatic Conductive Primer / Electrostatic Dissipative Primer.

NOTE: Eco-ECP / Eco-EDP must be applied over Insulating Primer within 24 hours.

 - 1. Mix components together.
 - 2. Mix only enough material which can be applied within the work time (see product bulletin for approximate work times).
 - 3. Apply Eco-ECP / Eco-EDP at the rate of 321-535 ft²/gal (7.99-13.15 m²/L).
 - 4. Allow coating to cure no longer than 24 hours at 75°F (24°C) and 50% relative humidity.
 - 4. Topcoat: Eco-ECT - Electrostatic Control Epoxy.

NOTE: Eco-ECT must be applied over Eco-ECP / Eco-EDP within 24 hours. (**Do not sand Eco-ECP / Eco-EDP as the dust particles of the conductive filler are an inhalation hazard.**) Primer needs to be set up enough to walk on before applying Eco-ECT topcoat. (See product bulletin for approximate walk times.)

 - 1. Mix components together.
 - 2. Apply Eco-ECT at the rate of 80-107 ft²/gal (1.97-2.63 m²/L).
 - 3. Test the surface resistivity after 24 hours, to confirm system falls within product specifications. The final reading should be taken after a 7-day cure period and recorded as baseline for future audits. Full coating properties take 14 days to develop.

3.04 Protection

- A. Close job site to traffic for a period of 24 hours after coating application at 75°F (24°C) and 50% relative humidity. Allow more time at low temperatures and for heavier traffic.

END OF SECTION