

## Luminescent Matrix

## Product Data Sheet

Revision Date: 2/2021

### **Description:**

Terroxy Luminescent Matrix is a 100% solids (zero VOC) epoxy resin that utilizes a long lasting class of phosphorescent (glow-in-the-dark) pigments. Terroxy Luminescent Matrix can be combined with a variety of decorative aggregates to be used as a pre-cast or poured-in-place epoxy terrazzo system. This two part 100% solid matrix consists of a 5:1 ratio, Part A Resin to Part B Hardener. The finished surface is chemical resistant, easy to maintain, virtually odor free and does not support bacterial growth. The phosphorescent pigments will absorb light from common sources and emit a visible glow-in-the-dark effect.

### **Product Benefits:**

- Initial afterglow brightness of up to ten times of current radio luminescent and photo luminescent pigments.
- Activation by a wide wavelength ban (200-450 nm)
- Extremely durable, provides lowest life cycle cost available for decorative flooring
- Chemical and high traffic wear resistance
- Environmentally friendly, zero VOC content
- Resists bacteria and fungal growth

### **Coverage:**

Coverage rates shown below are approximate and will depend upon application technique, surface texture, porosity of substrate and job conditions.

Terrazzo Floor Thickness	Approximate Coverage Per Blended Gallon
1/4" Thickness	11-13 ft <sup>2</sup>
3/8" Thickness	8-10 ft <sup>2</sup>

  

Terrazzo Floor Thickness	Approximate Coverage Per 3.8 Blended Liters
6.4 mm Thickness	1.02 - 1.21 m <sup>2</sup>
9.5 mm Thickness	0.74 - 0.93 m <sup>2</sup>

### **Concrete Substrate Preparation:**

1. Concrete slab shall have an efficient moisture/vapor barrier (suggested minimum: 15 mils thickness = .4 mm) directly under the concrete slab.
2. Allow substrate to cure a minimum of 28 days.
3. Sub-floor should be flat (maximum variation not to exceed 1/4" in 10 feet = 6.4 mm in 3.1 m). Surface should be checked for soundness and any "hollow" areas removed.
4. Test concrete substrates according to ASTM F2170 (determining relative humidity in concrete slabs using in situ probes). Do not install terrazzo or terrazzo accessories until test results are less than 80% RH. If 80% RH is not met, consult T&M for additional drying or negative side moisture mitigation methods. (See Terroxy Moisture Vapor Treatment or IC Moisture Guard PDS)
5. Concrete surface shall be prepared mechanically by shot blasting. Surface preparation results should achieve a CSP3-CSP5 profile according to ICRI Guideline No. 03732.
6. A light steel trowel is needed to provide an acceptable surface with minimum laitance.
7. The use of concrete curing agents may prevent bonding. If curing agent present, surface must be shot blasted to remove all contaminates from the floor.

### **Installation Instructions**

#### **Mixing:**

During installation and initial cure cycle, ambient air and slab temperature shall be maintained as per Terroxy Resin Systems' recommendations, minimum 60°F and max of 90°F (15.5°C - 32.2°C). Set divider strips in accordance with architectural specifications. Divider strips shall be permanently bonded to substrate utilizing 100% solid epoxy resin as suggested by Terroxy Resin Systems. Prime the substrate with Terroxy Primer and allow to set for a minimum of

30 min. before applying Terroxy Luminescent Matrix. Mix Terroxy Resin Systems Luminescent Matrix Part A Resin and Part B Hardener at a ratio of 5:1 by volume for 3 minutes; add the specified aggregates.

**Applications:**

Trowel to the desired thickness specified in the architect's design then allow system to cure overnight. Grind with 24 grit or rough grit stones. Grout surface with Terroxy Luminescent Matrix or Terroxy Clear Resin to seal and fill voids. Allow the system to cure overnight. (Grout may be left on terrazzo until other trades' work is completed.) Grind floor with medium or fine grit stones until all grout is removed from surface. Polishing may need to be repeated if a higher shine finish is desired. Clean thoroughly with a neutral cleaner with a pH factor between 7-10 and allow surface to dry. Seal with TRX Sealer, Terroxy WB Urethane Sealer, Terroxy WB Acrylic Sealer + or Terroxy Acrylic Sealer in accordance with Terrazzo & Marble Supply Companies.

**Cure Time:**

18 - 24 Hours prior to grinding.

**Technical Data:** Neat Resin Performance Properties

Property	Test Method	Typical Results
Hardness	ASTM D-2240 using Shore-D Durometer	75-85
Tensile Strength	ASTM D-638	4800 psi min. (33.1 MPa)
Tensile Elongation	ASTM D-638	4-8%
Flexural Strength	ASTM D-790	4500 psi min. (31.0 MPa)
Flexural Modulus	ASTM D-790	2.3 x 10 <sup>5</sup> psi (1586.0 MPa)
Chemical Resistance	ASTM D-1308 Seven Days at room temperature by immersion method.	No deleterious effects : <ul style="list-style-type: none"> <li>• Distilled Water</li> <li>• Mineral Oil</li> <li>• Isopropanol</li> <li>• Ethanol</li> <li>• 0.025 Detergent Solution</li> <li>• 1% Soap Solution</li> <li>• 10% Sodium Hydroxide</li> <li>• 10% Hydrochloric Acid</li> <li>• 30% Sulfuric Acid</li> <li>• 5% Acetic Acid</li> </ul>
Flammability	ASTM D-635	Self extinguishing, extent of burning 0.25" (6.4 mm) max
	NFPA 253	Classified Class 1
Fire Rating - Test for Surface Burning Characteristics of Flooring	CAN/ULC S102.2-10 Tunnel Test	Smoke Developed Classification (SDC) - 175
		Flame Spread Rating (FSR) - 5
Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chamber	ASTM D5116 (aka CA Section 01350)	Meets Section 1350 requirements
Thermal Coefficient of Linear Expansion	ASTM D-696	25x10 <sup>-6</sup> inches per inch per °F to 140°F maximum
		11.4x10 <sup>-7</sup> cm per cm per °C to 60°C maximum
Bond Strength	ASTM C-1583-04/ ACI COMM 503, Bulletin 59-43 (pages 1139-1141)	350 psi minimum (2.41 MPa) - 100% concrete failure
Compressive Strength	ASTM D-695, Specimen B Cylinder	13,920 psi minimum (96.0 MPa min)
Fungus & Bacterial Resistance	MIL F-52505 4.4.2.11	Will not support growth of fungus or bacteria
Impact Resistance	MIL D-3134F 4.7.3	Withstands 16 ft/lbs without cracking, delaminating or chipping. Without indentation
Resistance to Elevated Temperatures	MIL D-3134F 4.7.4	No slip or flow at 158°F (70°C)
Indentation	MIL D-3134F 4.7.4	Withstands 2000 lbs/ sq in for 30 min. without indentation
		Withstands 13.8 MPa for 30 min. without indentation
Thermal Shock Resistance	ASTM C-884	Passes
Water Absorption	ASTM D-570	0.010%
Critical Radiant Flux	ASTM E-648	1.0 watts/cm <sup>2</sup>
Abrasion Resistance	ASTM D-4060	0.035 grams lost

### Maintenance:

Clean surface with neutral cleaner that has a pH factor between 7 and 10. Rinse with clean water then allow surface to dry. Routine mechanical scrubbing is recommended for all surfaces having a non-skid texture. Long periods of heavy traffic may cause wear patterns across the surface.

Terroxy Luminescent Matrix is easily cleaned with neutral soaps or detergents. Routine hand scrubbing is recommended for all surfaces having a non-skid texture. Waxing is optional. Long periods of heavy traffic may cause wear patterns necessitating a finish coat maintenance application of TRX Sealer, Terroxy WB Urethane Sealer, Terroxy WB Acrylic Sealer + or Terroxy Acrylic Sealer in accordance with Terrazzo & Marble Supply Companies.

### Technical Service:

Terrazzo & Marble Supply Companies, distributor of Terroxy Resin Systems, provides services and consultations on material selection, specifications and troubleshooting concerning proper thin-set epoxy terrazzo installation. Contact our **Terrazzo Sales Desk at 800.7.MARBLE** or **T&M Technical Department at 708.385.6633** for questions or assistance.

### Precautions:

Refer to cautionary information printed on the product container. For medical emergencies, contact Chemtrec, the Chemical Emergency Transportation Center, at 800.424.9300.

### Warranty:

Terrazzo & Marble Supply Companies warrants for a period of one (1) year that Terroxy Luminescent Matrix will be free of manufacturing defects and will conform to published specification when handled, stored, mixed and applied in accordance to recommendations of Terrazzo & Marble. If Terroxy Luminescent Matrix fails to meet this warranty, the liability of Terrazzo & Marble will be limited to replacement of any non-conforming Terroxy Luminescent Matrix only if notice of such non-conformity is given to Terrazzo & Marble within one (1) year from the delivery of materials. Terrazzo & Marble may, according to its discretion, refund the price received by Terrazzo & Marble in lieu of replacing the Terroxy Luminescent Matrix. No customer, distributor or representative of Terrazzo & Marble is authorized to change or modify the published specification of this warranty in any way. No one is authorized to make oral warranties on behalf of Terrazzo & Marble. In order to obtain replacement or refund, the customer must provide written notice containing full details of the non-conformity. Terrazzo & Marble reserves the right to inspect the non-conforming Terroxy Luminescent Matrix prior to replacement. Except for the expressed warranty stated above, there is no other warranties, expressed or implied, including without limitation, implied warranty of merchantability or fitness for purpose. Terrazzo & Marble's obligation shall not extend beyond the obligations expressly undertaken above and Terrazzo & Marble shall have no liability or responsibility to the purchaser or any third party for any loss, cost, expense, damage or liability, whether direct or indirect, or for incidental or consequential damages.

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