



## **DIVISION 09 66 23.16 - EPOXY RESIN TERRAZZO FLOORING**

### **1. GENERAL**

#### **1.1 SUMMARY**

This specification covers the installation of a decorative, cast in place, light-stabile, thin-set epoxy surfacing system designed to provide durable, lightweight terrazzo flooring in distinctive, aesthetic patterns. Attractive design elements can be enhanced with the addition of pre-cast inlays. MasterPiece ETS meets or exceeds all NTMA standards, and is available in all standard NTMA epoxy plate colors.

#### **1.2 WORK INCLUDED**

Furnish all labor and materials to prepare surface and install system in accordance with the following specifications.

#### **1.3 RELATED DOCUMENTS**

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this Section.

#### **1.4 DELIVERY, STORAGE, AND HANDLING**

The materials shall be delivered to the job site in the original factory sealed containers bearing the product name, color, manufacturer's lot number, and precautionary labels. All products shall be manufactured or supplied by Polymerica, Inc. Materials are to be stored in a dry, enclosed area, protected from exposure to moisture, and maintained at a temperature between 60° F and 85° F.

#### **1.5 INSTALLER QUALIFICATIONS**

The installer shall be an established firm regularly engaged in the installation of polymeric flooring systems, with a minimum of five (5) years experience in successfully applying the same or similar systems. The installer shall be a member in good standing of the NTMA, financially responsible, and able to supply references of jobs of a similar nature completed within the last five years. All the work by the installer shall be performed in accordance with NTMA standards.

#### **1.6 PROJECT CONDITIONS**

- (a) Concrete substrate shall have cured thirty (30) days prior to application. If curing compounds have been used, they must be mechanically removed. Concrete shall be level to 1/8" in 10', have a light broom finish, and be free of grease or laitance.
- (b) Concrete subfloors on or below grade shall be adequately waterproofed beneath and at the perimeter of the slab. Substrate interior relative humidity must be below 75%, as measured by a Protimeter, and / or calcium chloride test results must not exceed 5.0 pounds per 1,000 square feet per 24 hours. Reference Polymerica Technical Bulletin SP-C for details on these tests.
- (c) General Contractor shall supply utilities including electric, water, and finished lighting. An air and substrate temperature of between 60° F and 85° F, and a relative humidity of 50% or less shall be maintained during

installation and curing.

(d) Job area shall be free of other trades during installation and curing.

**1.7 SUBMITTALS**

(a) The installer shall submit three (3) finished samples of the product, color, and texture specified, along with complete product data, and Material Safety Data Sheets. All performance properties and cautions contained therein shall be considered part of this specification.

(b) Submittal shall include two 6" lengths of each type and kind of divider strips.

(c) Submittal shall include two copies of MasterPiece maintenance recommendations.

**2. PRODUCTS**

**2.1 ACCEPTABLE MANUFACTURERS / PRODUCTS**

MasterPiece Light Stabilized Epoxy Terrazzo Surfacing (ETS-LS) as manufactured by Polymerica, Inc.

**2.2 DESCRIPTION / PROPERTIES**

MasterPiece Light Stabilized Epoxy Terrazzo Surfacing (ETS-LS) shall be installed at a nominal 1/4" - 3/8" thickness consisting of

(a) MasterPiece EPS, a 100% solids penetrating primer

<b>COMPONENT PERFORMANCE CHARACTERISTICS</b>	
Tensile Strength (ASTM D-638) .....	8,500 psi.
Slant Shear Strength .....	2,100 psi.
Elongation (ASTM D-638) .....	5.5%
Adhesion (ASTM D-4541)	
to metal .....	2,500 psi.
to concrete .....	350 psi. (concrete fails)
Hardness (ASTM D-2240) .....	75 (Shore D)
Abrasion Resistance (ASTM D-4060) .....	35 - 40 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Service Temperature .....	160°F (immersion), 185°F (dry heat)

(b) MasterPiece ETS-LS, a ground and polished composite of marble, granite, onyx, or glass chips, and MasterPiece ETB-LS, a 100% solids, light-stabile, epoxy binder

<b>COMPONENT PERFORMANCE CHARACTERISTICS</b>	
Compressive Strength (ASTM C-579) @ 7 days .....	8,500 psi.
Tensile Strength (ASTM C-307) .....	2,250 psi.
Flexural Strength (ASTM C-580) .....	4,500 psi.
Bond Strength (ACI 503R) .....	350 psi. concrete fails
Thermal Coefficient of Expansion (ASTM D-696) .....	0.000025 per inch/degree F
Abrasion Resistance (ASTM D-4060) .....	19 mg.
CS-17, 1 kg. load, 1,000 rev.	weight loss
Thermal Shock Resistance (ASTM C-884) .....	passes
Water Absorption (ASTM C-413) .....	0.1%
Flammability (ASTM D-635) .....	Self-extinguishing
Impact Resistance (MIL D-3134F) .....	16 foot pounds (concrete fractures)
Indentation (MIL D-3134F) .....	No indentation

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### CHEMICAL RESISTANCE

No deleterious effects by contaminants listed below after 7-day immersion at room temperature, per ASTM D-1308:

- |                            |                          |
|----------------------------|--------------------------|
| 1) Distilled Water         | 6) 1.0% soap solution    |
| 2) Mineral Water           | 7) 10% Sodium Hydroxide  |
| 3) Isopropanol             | 8) 10% Hydrochloric Acid |
| 4) Ethanol                 | 9) 30% Sulphuric Acid    |
| 5) 2.5% detergent solution | 10) 5% Acetic Acid       |

Other chemicals as follows:

R - Recommended for continuous service      L - Limited Recommendation, occasional spills

<u>Reagent</u>	<u>Rating</u>	<u>Reagent</u>	<u>Rating</u>
Acetone .....	L	Lactic Acid-15% .....	R
Bleach .....	L	Methyl Ethyl Ketone .....	L
Citric Acid - 30% .....	R	Skydrol .....	R
Diesel Fuel .....	R	Toluene .....	L
Ethylene Glycol .....	R	Urea .....	R
Fatty Acids .....	L	Vinegar .....	R
Gasoline .....	R	Xylene .....	L

(c) a clear sealer, to be recommended by manufacturer

### 2.3 PACKAGING

All materials shall be factory weighed and packaged from a single source manufacturer.

### 2.4 SUBSTITUTIONS

No substitutions shall be allowed.

## 3. EXECUTION

### 3.1 EXAMINATION

With installer present, the substrate shall be examined by a manufacturer's representative for compliance with requirements for installation tolerances and other conditions affecting performance. (Reference Section 1.6) Proceed with installation only after unsatisfactory conditions including levelness tolerances have been corrected.

### 3.2 PREPARATION

- (a) The concrete shall be prepared by mechanical means such as shot blasting or scarification with an integral dust collection system. Any spalled or deteriorated concrete shall be removed and filled back to the original surface with TrowelMaster IES. Consult Polymerica Bulletin SP-C for complete details.
- (b) All cracks shall be routed out to 1/4" minimum in width and depth and filled with an polyurea joint compound. Consult Polymerica Bulletin SP-D for details.

### 3.3 INSTALLATION

- (a) **MOISTURE VAPOR PASSIVATOR (IF REQUIRED)** - Should MVT or slab internal relative humidity exceed limits outlined in section 1.6, the slab shall be treated with MasterShield MVP, applied at a minimum of 30 mils DFT in compliance with manufacturer's directions. High MVT or RH readings may require an application of this product greater than the 30 mil minimum. Consult Polymerica Technical Department.
- (b) **MEMBRANE (OPTIONAL)** - Should crack suppression or waterproofing the substrate be desirable, areas shall be treated with MasterProof EWM membrane system, applied at a minimum of 25 mils DFT in compliance with manufacturer's directions.
- (c) **DIVIDER STRIPS / CONTROL STRIPS** - Control strips shall be installed directly over expansion joints in substrate. Divider strips shall be installed as shown on drawings.
- (d) **PRIMER** - Primer Shall be MasterPiece EPS. Components shall be squeegee-applied, then back-rolled with a good quality short nap roller according to manufacturer's directions. Application rate shall be 8 -10 mils DFT, or 160 - 200 square feet per mixed gallon.

- (e) **SURFACER** - Surfacers shall be MasterPiece ETS-LS. Components shall be mixed, screeded, trowel applied, and allowed to cure in strict accordance with manufacturer's directions. For more details, consult Polymerica Product Data Sheet.
- (f) **GRINDING** - Cured surfacer shall be ground, cleaned, rinsed, and vacuumed.
- (g) **GROUT COAT** - Grout coat shall be MasterPiece ETB-LS. Components shall be mixed according to manufacturer's directions, then scrape-troweled or squeegee applied to fill all pinholes, and allowed to cure. Surface shall be polished with a 120 or finer grit stone until all grout is removed.

**NOTE TO SPECIFIER: A variety of final coats are available which can provide protection against strong UV rays or sunlight, or function in extreme chemical service. Other final coat choices can provide an orange peel finish, various gloss levels, or varying degrees of slip resistance. Please consult with Polymerica Technical Department for assistance.**

- (h) **CLEAN-UP** - All trash and debris shall be properly disposed of and arrangements shall be made to remove all unused material from the job site.

#### **3.4 INTEGRAL COVE BASE**

Where specified, a cove base shall be installed integral with the floor in 2", 4", or 6" heights.

#### **3.5 PROTECTION**

The General Contractor shall be responsible for protection of the finished floor from damage by subsequent trades.

**The preceding specifications have been prepared as a guideline for most applications. Product specification is of vital importance to the successful completion of a project. Should you have any questions, please call our Technical Department.**

**GSMPESTLS-111105**

For additional information, visit our web site:

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