

GUIDE SPECIFICATION

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SECTION 09 66 10

EPOXY TERRAZZO FLOORING USING RECYCLED GLASS AGGREGATE

This guide specification has been prepared by EnviroGLAS Products, Inc., in printed and electronic media, as an aid to specifiers in preparing written construction documents flooring using EnviroGLAS Products, Inc. recycled glass aggregate.

It is imperative, when specifying non-breathing floor coverings such as epoxy terrazzo that the substrate to which the flooring is adhered is within manufacturer's recommended tolerances for moisture content and pH level. New concrete slabs should have a properly installed vapor barrier directly beneath the concrete slab. Both existing and new slabs should be tested for moisture and pH using a calcium chloride test (ref. ASTM F1869-98) or a deep probe test (ref. ASTM F2170). Elevated moisture or pH must be mitigated before new floor coverings can be installed. Refer to NTMA recommendations for further information regarding acceptable moisture and pH levels.

Edit entire master to suit project requirements. Modify or add items as necessary. Delete items which are not applicable. Words and sentences within brackets [] reflect a choice to be made regarding inclusion or exclusion of a particular item or statement. This section may include performance, proprietary and descriptive type specifications. Edit to avoid conflicting requirements. Editor notes to guide the specifier are included between lines of asterisks to assist in choices to be made. Remove these notes before final printing of specification.

This guide specification is written around the Construction Specifications Institute (CSI). Section Format standards references to section names and numbers are based on MasterFormat 2004.

For specification assistance on specific product applications, please contact our offices above.

EnviroGLAS Products, Inc. reserves the right to modify these guide specifications at any time. Updates to this guide specification will be posted to the manufacturer's web site and/or in printed matter as they occur. EnviroGLAS Products, Inc. makes no expressed or implied warranties regarding content, errors, or omissions in the information presented.

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 1. Fabrication and installation of epoxy terrazzo flooring using EnviroGLAS Products, Inc, recycled glass aggregate.
 2. Accessories necessary to complete work.

 Edit the "Related Sections" paragraph to identify other sections that may relate to work of this section.

- B. Related Sections:
 1. [Section 01 35 02 - LEED Requirements: Additional LEED requirements.]
 2. [Section 01 40 00 - Quality Requirements: Mock-ups.]
 3. [Section 03 30 00 - Cast in Place Concrete: Concrete substrates.]

1.2 SUBMITTALS

- A. General: Submit in accordance with Section 01330.
- B. [LEED] Submittals:
 1. Credit MR 4.1[and 4.2]: Product Data indicating percentages by weight of post consumer and post industrial recycled content for products having recycled content.
 - a. Include statement indicating costs for each product having recycled content.
 2. Credit MR 5.1[and 5.2]: Certification of content complying with Regionally Manufactured or Regionally Extracted Materials.
 3. Credit EQ 4.1: Manufacturers' product data for adhesives and sealants, including printed statement of VOC content.
- C. Shop Drawings: Submit layout drawings for divider strips, border strips, and control joint strips. Show detail for divider strip intersections.
- D. Samples:
 1. Submit full range of available colors for selection purposes for Architect's selection. After initial selection, submit a maximum of three (3) samples, minimum 4" x 4" for each finished combination of Epoxy Resin Color and Glass Aggregate Color for acceptance before proceeding with Work.

1.3 QUALITY ASSURANCE

- A. Fabricator Qualifications: Company specializing in fabricating work specified in this Section with minimum five years experience in type work required for Project.
- B. Materials Supplier:
 1. Materials furnished shall meet NTMA Specifications.
 2. Epoxy Resin supplier must be a member in good standing with the NTMA.

 On larger project, consider specifying a mock-up of one portion of the work for approval of installed unit.

1.4 MOCK-UPS

- A. General: Comply with Section 01400.
- B. Construct mock-up of each type of epoxy terrazzo flooring installation for Architect's approval. Completed mock-up [may] [may not] remain as completed work.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. General: Comply with Section 01600.
 1. Handle, transport, and store units to prevent damage to materials or structure.
 2. Store materials in a clean, dry location.

1.6 WARRANTY/GUARANTEE

- A. Warrant product to be free from defects in materials and fabrication for a period of 1 year from date of installation.

PART 2 - PRODUCTS

2.1 ACCEPTABLE FABRICATORS

- A. Subject to compliance with requirements indicated, provide products from fabricators/installers listed below:
 - 1. **EnviroGLAS Products, Inc.**, 309 Gold Street, Garland, Texas, 75042, (972) 276.9451 voice
 - 2. Member of the National Terrazzo and Mosaic Association (NTMA)

2.2 MATERIAL

- A. Epoxy Terrazzo: Provide sound, hard, durable, epoxy terrazzo of uniform strength, color, and texture, free of flaws, cracks, seams, or other mineral or organic defects which affect visual appearance or structural integrity.
 - 1. Epoxy Resin Performance Criteria without recycled glass aggregate added:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>REQUIREMENT</u>
Hardness	ASTM D-2240 using Shore D Durometer	60-85
Tensile Strength	ASTM D-638 run @ 0.2" minimum	3,000 psi minimum
Compressive Strength	ASTM D-695 Specimen B Cylinder	10,000 psi minimum
Chemical Resistance	ASTM D-1308/ 7 days at room temperature by immersion method have no deleterious effects, following contaminants used: Distilled water Mineral water Isopropanol Ethanol Detergent Solution .025 1% Soap Solution 10% Sodium Hydroxide 10% Hydrochloric Acid 30% Sulfuric Acid 5% Acetic Acid	No effect

- a. Epoxy Resin color: [_____] [As selected by [Architect] from Manufacturer's full available range].
- B. Aggregate:
 - 1. 100% Post Recycled Glass and/or Porcelain Aggregate.
 - 2. Recycled Glass Aggregate: As supplied by EnviroGLAS Products, Inc.
 - 3. Sizes to conform to NTMA Gradation standards.
 - 4. Aggregate color: [_____] [As selected by [Architect] from Manufacturer's full available range].
- C. Epoxy Terrazzo Flooring with EnviroGLAS Products, Inc. recycled glass aggregate: Provide sound, hard, durable, epoxy terrazzo of uniform strength, color, and texture, free of flaws, cracks, seams, or other mineral or organic defects which affect visual appearance or structural integrity.

1. Epoxy Resin blended with three volumes of EnviroGLAS Products, Inc. recycled glass aggregate finished to nominal 3/8" thickness, per Manufacturer's recommendations:
2. Performance criteria with EnviroGLAS Products, Inc. recycled glass aggregate:

<u>PROPERTY</u>	<u>TEST METHOD</u>	<u>REQUIREMENT</u>
Flammability	ASTM D-635	Self-extinguishing, extent of burning 0.25 maximum
Thermal Coefficient of Linear Expansion	ASTM D-696	25 x 10 ⁻⁶ per 140 degrees Fahrenheit. Temperature range: 12 degrees – 140 degrees
Bond Strength	Surface Soundness Adhesion Test	100% Concrete failure minimum 300 PSI minimum tensile strength

3. **Acceptable Product: EnviroGLAS Products, Inc.**
 4. Proportions:
 - a. Epoxy Terrazzo Topping: Recommended (80) 50 lb bags per 1000 feet of coverage.
 5. Mixing:
 - a. Epoxy Terrazzo Topping: Blend and Mix recycled glass aggregate, Filler, and Epoxy Resin per Manufacturer's recommendations.
- D. Strips:
1. Stop and Divider Strips: L type, zinc, depth as required.
- E. Terrazzo Cleaner:
1. Ph factor between 7 and 10, where applicable.
 2. Biodegradable and phosphate-free.
- F. Sealer:
1. Ph factor between 7 and 10, where applicable.
 2. Shall not discolor or amber.
 3. Flash Point: ASTM D-56 – 80 degrees Fahrenheit minimum, where applicable.
 4. UL-listed as "Slip Resistant".

PART 3 - EXECUTION

3.1 EXAMINATION/INSPECTION

- A. Examine conditions and proceed with work in accordance with Section 01400.
 1. Cracks in substrate will usually be transmitted from topping to surface.
 2. Treat cracks according to epoxy resin manufacturer recommendations.
- B. Confirm that sub floor is complete, level, square, true, rigid, and secure.
 1. Sub floor is not to vary more than 1/4" from true plane in ten (10) feet.
 2. If, for any reason, the Subcontractor questions the suitability for bonding, any work required to eliminate non-conformity of subsurface specifications is the responsibility of others.
 3. Any materials used to correct non-conformity must be compatible with the system selected and be approved by the terrazzo applicator.
- C. Moisture Vapor Transmission Test: ASTM F1869-98 and ASTM F2170. Perform by independent testing laboratory to determine suitability of concrete sub floor for receiving epoxy terrazzo flooring with regard to moisture content and curing compounds. Ensure concrete is within floor manufacturer's recommended limits prior to installation: ASTM F1869-98 recommended MVT less than 3 lbs. per 1000 sq. ft. per 24 hours and ASTM F2170 recommended 80% relative humidity and below.
 1. Contact Epoxy Manufacturer for suggested corrections to high moisture vapor transmission readings.

- D. Perform pH and adhesion tests to concrete substrate in accordance with floor manufacturer's recommendations. Ensure concrete is within NTMA and manufacturer recommended limits prior to terrazzo installation. Inform general contractor of all concrete slab corrections.

3.2 INSTALLATION

- A. Sub-Floor
 - 1. Shot or Bead Blast floor is recommended.
 - 2. Install control joints directly above control joints in sub-floor.
 - 3. Install divider strips as shown on Drawings.
- B. Placing Terrazzo
 - 1. Prime sub-floor in accordance with Manufacturer's recommendations.
 - 2. Place terrazzo mixture in panels formed by divider strips. Trowel mixture to top of strips.
 - 3. Allow to cure 24 hours prior to grinding.
- C. Finishing: Finish terrazzo to NTMA requirements.
 - 1. Rough Grinding: Grind with 24 or finer grit stones or with comparable diamond plugs.
 - a. Follow initial grind with 80 -120 grit stones.
 - 2. Grouting: Cleanse with clean water and rinse thoroughly.
 - a. Remove excess rinse water and allow drying.
 - b. Hand apply grout to fill voids completely.
 - c. Allow grout to cure.
 - 3. Fine Grinding: Grind with 120 or finer grit stones to achieve superior finish.
 - 4. Sealing: If required, apply per manufacturer direction.

3.3 CLEANING

- A. General: Comply with Section 01740.
 - 1. Keep installed work clean as work progresses.
 - 2. Leave clean and free from blemishes.
 - 3. Clean by moderate use of neutral cleaner acceptable by terrazzo manufacturer.
 - 4. Rinse clean and allow drying.

3.4 PROTECTION

- A. General Contractor shall protect the finished work from the time the terrazzo contractor finishes work.

END OF SECTION