

SECTION 09442

EPOXY THIN-SET TERRAZZO FLOORING SYSTEM

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Floor preparation and installation of 1/4-3/8 inch epoxy thin-set terrazzo.

1.2 RELATED SECTIONS

- A. Section [_____ - _____]: Building structural flooring surfaces.
- B. Section 09410 - Portland Cement Terrazzo.

1.3 REFERENCES

- A. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics.
- B. ASTM D 695 - Standard Test Method for Compressive Properties of Rigid Plastics.
- C. ASTM D 790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
- D. ASTM D 2240 - Standard Test Method for Rubber Property -- Durometer Hardness.

1.4 SYSTEM DESCRIPTION

- A. General Polymers Corporation System No. 1100 Epoxy Thin-Set Terrazzo, 1/4 inch - 3/8 inch in thickness, comprised of the following components:
 - 1. 3578 Universal Penetrating Epoxy Primer.
 - 2. 3552 or 3553 EPO-FLEX Flexible Epoxy Membrane.
 - 3. 3520 Epoxy Terrazzo Matrix binder resin.
 - 4. 5270 Epoxy Filler.
 - 5. Marble chips, sized for finished thickness.
 - 6. Zinc, brass, or plastic divider strips.
 - 7. 3520G Epoxy Terrazzo Grout, with 5290 Grout Filler or 5270 Epoxy Filler as grout coat.
 - 8. 4501 Acrylic Sealer or 3744 NOVO-COTE Chemical Resistant Epoxy as seal coat.

- B. Completed system shall comply with the following minimum performance requirements:
 - 1. Hardness, Shore D, per ASTM D 2240: 75.
 - 2. Compressive Strength, per ASTM D 695: 11,000 psi.
 - 3. Tensile Strength, per ASTM D 638: 6,000 psi.
 - 4. Flexural Strength, per ASTM D 790: 10,000 psi.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Provide manufacturer's specifications on cured system and individual components, including physical and performance properties, test results, and Material Safety Data Sheets.
- C. Color Chart: Provide manufacturer's standard color chart for color selection.
- D. Samples: Submit cured samples not less than 6 inches by 6 inches for verification of color selection and finish texture. Include 6 inch length of divider strip.
- E. Shop Drawings: Indicate layout and spacing of divider strips and control joints. Provide details of terrazzo termination and transition to other flooring.
- F. Manufacturer's Installation Instructions: Include special procedures such as installation of control and expansion joints, perimeter conditions requiring special attention, requirements for preparation of substrate, and final finishing and protection.
- G. Manufacturer's Certificate: Certify that all components of system comply with specified requirements.
 - 1. Include calculations and packing slip for this project, signed by a company officer, verifying that the quantity of material being furnished for the project will achieve the required coverage and thickness.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Obtain all components for flooring system from a single company specializing in manufacturing the products specified in this section and with not fewer than ____ years of documented experience.

- B. Installer's Qualifications: A company certified in writing by the flooring system manufacturer, having skilled mechanics with not fewer than three years of satisfactory experience in installation of flooring systems of the type specified in this section.
 - 1. Furnish a list of similar flooring projects installed within the previous ___ years. Include project name, area of terrazzo flooring actually installed, and contact information.
 - 2. Furnish resumes of key project personnel, detailing relevant experience.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in manufacturer's undamaged, unopened containers clearly marked with the following information:
 - 1. Product name and number.
 - 2. Manufacturer name and contact information.
 - 3. Component designation.
 - 4. Product mix ratio.
 - 5. Health and safety information.
 - 6. CHEMTREC emergency response information.
- B. Promptly inspect delivered material to verify quantities, conformance to requirements, and undamaged condition.
- C. Handle materials using methods that will prevent damage.
- D. Store materials in accordance with manufacturer's instructions, keeping seals and labels intact and legible. Maintain temperatures within allowable range. Do not use materials beyond manufacturer's maximum recommended shelf life.

1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not begin installation until slab temperatures have been brought to a minimum temperature of 50 degrees F. Maintain that temperature during installation and for not less than 72 hours after installation has been completed.
- B. Do not begin installation until building's permanent lighting system has been completed and is operational. Maintain lighting at a minimum uniform level of 50 footcandles in areas where the epoxy terrazzo flooring system is being installed.

- C. Provide adequate ventilation during installation to prevent accumulation of toxic volatile compounds.

1.9 WARRANTY

- A. Provide warranty signed by manufacturer and installer, agreeing to repair or replace defective materials within a period of one year after Date of Substantial Completion. Defective materials shall include epoxy terrazzo that has lost bond to substrate and areas that have worn through to substrate with normal use.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Products of this section are based on materials and systems produced by General Polymers Corporation, located at 145 Caldwell Drive, Cincinnati, Ohio 45216. ASD. Tel: (800) 543-7694 or (513) 761-0011.
 - 1. Substitutions will not be acceptable.
 - 2. Substitutions will be considered only in accordance with submittal provisions specified in Section 01600.

2.2 PRODUCTS

- A. Primer: 3578 Universal Penetrating Epoxy Primer.
- B. Flexible Epoxy Membrane: 3552 EPO-FLEX (gray).
- C. Flexible Epoxy Membrane: 3553 EPO-FLEX (clear).
- D. Binder Resin: 3520 Epoxy Terrazzo Matrix.
- E. Filler: 5270 Epoxy Filler.
- F. Aggregate: #0, #1, and #2 marble chips.
- G. Grout Coat: 3520G Epoxy Terrazzo Grout, with one of the following:
 - 1. 5290 Grout Filler, mixed with grout.
 - 2. 5270 Epoxy Filler, broadcast into wet grout.
- H. Seal Coat: One of the following:
 - 1. 4501 Acrylic Sealer.
 - 2. 3744 NOVO-COTE Chemical Resistant Epoxy.

- I. Divider Strips: Zinc coated steel bottom strip with anchoring features, overall depth to conform to finished thickness of terrazzo, and exposed portion as follows:
 1. Material: Zinc.
 2. Material: Brass.
 3. Material: Plastic, color as selected from manufacturer's standards.
 4. Width: 1/8 inch nominal.
 5. Width: 3/16 inch nominal.
 6. Width: as indicated on drawings.
 7. Width: _____.

2.3 COLORS

- A. Match approved samples.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that substrates are in proper condition to receive thin-set epoxy terrazzo.
- B. Test concrete substrates to verify that moisture content does not exceed levels recommended by manufacturer of epoxy terrazzo materials.
- C. Verify that substrate is sloped to drains and that drains are properly installed at correct elevation for finished epoxy terrazzo thickness.

3.2 PREPARATION

- A. Prepare concrete substrate to receive thin-set epoxy terrazzo by removing laitance and opening surface.
- B. Achieve surface profile of concrete similar to medium grit sandpaper, free of bond-inhibiting contaminants, by means of light brush grit blasting.
- C. Repair non-moving cracks in substrate with semi-rigid epoxy, complying with General Polymers Concrete 102.
- D. Prepare edge conditions in accordance with approved shop drawings.

- E. Apply primer in accordance with manufacturer's instructions.

3.3 INSTALLATION

- A. Apply each component of the epoxy thin-set terrazzo flooring system in strict compliance with manufacturer's written installation instructions.
- B. Adhere strictly to manufacturer's published mixing methods and comply with limitations on recoat windows, cure times, and environmental conditions.
- C. Install divider and control joint strips in locations indicated and at proper elevation.
- D. Place terrazzo mix over prepared substrate to achieve minimum finished thickness of 1/4 inch.
- E. Place terrazzo mix over prepared substrate to achieve nominal finished thickness of 3/8 inch.
- F. Cure thin-set epoxy in compliance with manufacturer's instructions, taking care to prevent contamination.

3.4 FINISHING

- A. Produce final surface to match approved samples.
- B. Grind terrazzo surfaces with power disc machine, sequencing from coarse to fine grit abrasive, using a wet method.
- C. Apply grout mix matching mortar to fill honeycomb exposed during grinding process. Remove patch mix by grinding with fine grit abrasive.

3.5 FIELD QUALITY CONTROL

- A. At Owner's discretion and upon direction by Architect, take 1 inch diameter cores at locations indicated to verify system thickness, at rate not to exceed 1 per 1,000 square feet.
- B. Remove epoxy terrazzo in areas where cores indicate less than specified thickness, and replace with new material at Contractor's expense.

- C. Patch cored areas where cores indicate specified thickness has been achieved, matching appearance of surrounding area.

3.6 ADJUSTING AND CLEANING

- A. Scrub and clean epoxy terrazzo surfaces with cleaner in accordance with manufacturer's instructions.
- B. Immediately after drying, apply sealer in accordance with manufacturer's instructions.

3.7 PROTECTION

- A. Do not permit traffic over finished terrazzo surfaces.
- B. Protect epoxy terrazzo surfaces from damage and wear during remaining construction period, using temporary coverings as recommended by the manufacturer.

END OF SECTION