SECTION 096623 - RESINOUS MATRIX TERRAZZO FLOORING

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

See "Sustainable Design Considerations" Article in the Evaluations for a discussion of sustainable design requirements that may affect revisions to this Section.

1. GENERAL
   * + 1. RELATED DOCUMENTS
          1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
       2. SUMMARY
          1. Section Includes:

Thin-set, epoxy-resin terrazzo flooring.

Precast epoxy-resin terrazzo units.

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 079200 "Joint Sealants" for sealants installed with terrazzo.

* + - 1. DEFINITIONS
         1. NTMA – National Tile and Mosaic Association, Inc.
      2. PREINSTALLATION MEETINGS

Retain "Preinstallation Conference" paragraph below if Work of this Section is extensive or complex enough to justify a conference.

* + - * 1. Preinstallation Conference: Conduct conference at Project site.

If needed, insert list of conference participants. Review methods and procedures related to terrazzo including, but not limited to, the following:

Inspect and discuss condition of substrate and other preparatory work performed by other trades.

Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

Review special terrazzo designs and patterns.

* + - 1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.
         5. Sustainable Design Submittals:
         6. Shop Drawings: Include terrazzo installation requirements. Include plans, sections, component details, and relationship to other work. Show layout of the following:

Divider strips.

Control-joint strips.

Accessory strips.

Abrasive strips.

Stair treads, risers, and landings.

Precast terrazzo jointing and edge configurations.

Terrazzo patterns.

Retain "Samples" paragraph below for single-stage Samples, with a subordinate list if applicable. Retain "Samples for Initial Selection" and "Samples for Verification" paragraphs for two-stage Samples.

* + - * 1. Samples: For each exposed product and for each color and texture specified, 6 inches in size.
        2. Samples for Initial Selection: NTMA's "Terrazzo Color Palette" showing the full range of colors and patterns available for each terrazzo type.
        3. Samples for Verification: For each type, material, color, and pattern of terrazzo and accessory required showing the full range of color, texture, and pattern variations expected. Label each terrazzo Sample to identify manufacturer's matrix color and aggregate types, sizes, and proportions. Prepare Samples of same thickness and from same material to be used for the Work, in sizes indicated below:

Terrazzo: 6-inch- square Samples.

Precast Terrazzo: 6-inch- square Samples.

Accessories: 6-inch- long Samples of each exposed strip item required.

Coordinate "Qualification Data" paragraph below with qualification requirements in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Installer.

Retain "Material Certificates" paragraph below to require submittal of material certificates from manufacturers.

* + - * 1. Material Certificates: For each type of terrazzo material or product.

Retain "Installer Certificates" paragraph below if Installer certification is required in "Quality Assurance" Article.

* + - * 1. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.

Retain "Preinstallation moisture-testing reports" paragraph below if Contractor is responsible for preinstallation testing.

* + - * 1. Preinstallation moisture-testing reports.
      1. CLOSEOUT SUBMITTALS

NTMA publishes recommendations for minimum maintenance-program requirements.

* + - * 1. Maintenance Data: For terrazzo to include in maintenance manuals.
      1. QUALITY ASSURANCE
         1. Installer Qualifications:

If applicable for Project location and if contractor membership is required, retain first subparagraph below. See "Installer Considerations" Article in the Evaluations. Consult NTMA for list of contractor members.

Engage an installer who is a contractor member of NTMA.

If applicable for manufacturers, coordinate subparagraph below with "Installer Certificates" paragraph in "Informational Submittals" Article. See "Installer Considerations" Article in the Evaluations.

Engage an installer who is certified in writing by terrazzo manufacturer as qualified to install manufacturer's products.

* + - * 1. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

Build mockups for terrazzo including accessories.

Size: Minimum 100 sq. ft. of typical poured-in-place flooring[**and base**] condition for each color and pattern [**in locations indicated**] [**in locations directed by Director’s Representative**].

Include [**base**] [**first three stair treads**].

Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Director’s Representative specifically approves such deviations in writing.

* + - 1. DELIVERY, STORAGE, AND HANDLING
         1. Deliver materials to Project site in supplier's original wrappings and containers, labeled with source's or manufacturer's name, material or product brand name, and lot number if any.
         2. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.
      2. FIELD CONDITIONS
         1. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting terrazzo installation.

Retain "Field Measurements" paragraph below for precast terrazzo.

* + - * 1. Field Measurements: Verify actual dimensions of construction contiguous with precast terrazzo by field measurements before fabrication.
        2. Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during terrazzo installation.
        3. Close spaces to traffic during terrazzo application and for not less than 24 hours after application unless manufacturer recommends a longer period.
        4. Control and collect water and dust produced by grinding operations. Protect adjacent construction from detrimental effects of grinding operations.

1. PRODUCTS

Manufacturers and products listed in SpecAgent and Masterworks paragraph Builder are neither recommended nor endorsed by the AIA or Deltek. Before inserting names, verify that manufacturers and products listed there comply with requirements retained or revised in descriptions and are both available and suitable for the intended applications.

* + - 1. MANUFACTURERS
         1. Source Limitations: Obtain primary terrazzo materials from single source from single manufacturer. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.
         2. Source Limitations for Aggregates: Obtain each color, grade, type, and variety of granular materials from single source with resources to provide materials of consistent quality in appearance and physical properties.
      2. PERFORMANCE REQUIREMENTS
         1. NTMA Standards: Comply with NTMA's written recommendations for terrazzo type indicated unless more stringent requirements are specified.
      3. EPOXY-RESIN TERRAZZO

Epoxy-resin terrazzo is the predominant resinous matrix system. Polyester-resin and polyacrylate-modified cement terrazzo are not included in the Section Text but may be inserted if required.

Copy and re-edit "Epoxy-Resin Terrazzo" paragraph below for each product.

Insert drawing designation. Use designations on Drawings to identify each product.

* + - * 1. Epoxy-Resin Terrazzo <**Insert designation**>: Comply with manufacturer's written instructions for matrix and aggregate proportions and mixing.

[Manufacturers:](http://www.specagent.com/Lookup?ulid=516) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Concord Terrazzo Company, Inc.

[Key Resin Company](http://www.specagent.com/Lookup?uid=123457043076).

[Master Terrazzo Technologies LLC](http://www.specagent.com/Lookup?uid=123457043077).

[Sherwin-Williams Company, General Polymers](http://www.specagent.com/Lookup?uid=123457043075).

Approved equivalent.

See "Mix Design" Article in the Evaluations for a comparison of NTMA series.

* + - * 1. Mix Color and Pattern: [**As selected by Director’s Representative from manufacturer's full range**] [**As selected by Director’s Representative from NTMA's "Terrazzo Color Palette" EI Series**] [**As selected by Director’s Representative from NTMA's "Terrazzo Color Palette" EII Series**] [**As selected by Director’s Representative from NTMA's "Terrazzo Color Palette" EIII Series**] [**As selected by Director’s Representative from NTMA's "Terrazzo Color Palette" EIV Series**] [**Match Director’s Representative's sample**] [**Match existing**].
        2. Materials:

Retain "Moisture-Vapor-Emission-Control Membrane" and "Substrate-Crack-Suppression Membrane" subparagraphs below where terrazzo is installed over concrete incorporating lightweight aggregates. Consider specifying moisture-vapor-emission-control and crack-suppression membranes as part of an allowance for use over concrete incorporating standard-weight aggregates.

Moisture-Vapor-Emission-Control Membrane: Two-component, high-solids, high-density, low-odor, epoxy-based membrane-forming product produced by epoxy terrazzo manufacturer that reduces moisture emission from concrete substrate to not more than 3 lb of water/1000 sq. ft. in 24 hours.

Substrate-Crack-Suppression Membrane: Product of terrazzo-resin manufacturer, having minimum 120 percent elongation potential according to ASTM D412.

Retain "Reinforcement" subparagraph if required.

Reinforcement: Fiberglass scrim.

Primer: Manufacturer's product recommended for substrate and use indicated.

Epoxy-Resin Matrix: Manufacturer's standard recommended for use indicated and in color required for mix indicated.

"Physical Properties without Aggregates" and "Physical Properties with Aggregates" subparagraphs below are based on NTMA's guide specification. Revise to suit Project. If conductive system is required, insert electrical-resistance requirements.

Physical Properties without Aggregates:

Hardness: 60 to 85 per ASTM D2240, Shore D.

Minimum Tensile Strength: 3000 psi per ASTM D638 for a 2-inch specimen made using a "C" die per ASTM D412.

Minimum Compressive Strength: 10,000 psi per ASTM D695, Specimen B cylinder.

Chemical Resistance: No deleterious effects by contaminants listed below after seven-day immersion at room temperature per ASTM D1308.

Distilled water.

Mineral water.

Isopropanol.

Ethanol.

0.025 percent detergent solution.

1.0 percent soap solution.

5 percent acetic acid.

10 percent sodium hydroxide.

10 percent hydrochloric acid.

30 percent sulfuric acid.

Physical Properties with Aggregates: For terrazzo blended according to manufacturer's recommendations with one part epoxy resin with three parts marble aggregate consisting of 60 percent No. 1 chips and 40 percent No. 0 chips that is ground and grouted to a 1/4-inch nominal thickness, and cured for 7 days at 75 deg F plus or minus 2 deg F and at 50 percent plus or minus 2 percent relative humidity.

Flammability: Self-extinguishing, maximum extent of burning 1/4 inch according to ASTM D635.

Thermal Coefficient of Linear Expansion: 0.0025 inch/inch per deg F according to ASTM C531.

Aggregates: Comply with NTMA gradation standards for mix indicated and contain no deleterious or foreign matter.

Abrasion and Impact Resistance: Less than 40 percent loss per ASTM C131.

24-Hour Absorption Rate: Less than 0.75 percent.

Dust Content: Less than 1.0 percent by weight.

If needed for decorative effect, insert materials for toppings that include art objects or aggregates other than marble chips, such as granite, quartz, pea gravel, mother-of-pearl, recycled glass, or other suitable granules. Consult NTMA for recommendations.

Finishing Grout: Resin based.

* + - 1. PRECAST EPOXY-RESIN TERRAZZO

* + - * 1. [Manufacturers:](http://www.specagent.com/Lookup?ulid=518) Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to the following:

Concord Terrazzo Company, Inc.

[Precast Terrazzo Enterprises, Inc](http://www.specagent.com/Lookup?uid=123457043081).

[Wausau Tile Inc](http://www.specagent.com/Lookup?uid=123457043083).

Approved equivalent.

Copy and re-edit "Precast Terrazzo Base" paragraph below if more than one type is required.

Insert drawing designation. Use designations on Drawings to identify each type.

* + - * 1. Precast Terrazzo Base <**Insert designation**>: Minimum 3/8-inch- thick, epoxy terrazzo units cast in maximum lengths possible, but not less than 36 inches. Comply with manufacturer's written instructions for fabricating precast terrazzo base units in sizes and profiles indicated.

Type: [**As indicated**] [**Coved with minimum 3/4-inch radius**] [**Straight**] [**Splayed**].

Retain first option in "Top Edge" subparagraph below if top edge is concealed.

Top Edge: [**Straight, unfinished**] [**Beveled with polished top surface**] [**Radius edge with polished top surface**].

Retain "Metal Toe Strip" subparagraph below for coved-toe bases. Insert metal-divider requirements if needed.

Metal Toe Strip: [**Zinc**] [**Brass**].

Outside Corner Units: With finished returned edges at outside corner.

Color, Pattern, and Finish: [**As selected by Director’s Representative from full range of industry colors**] [**Match Director’s Representative's sample**] [**Match adjacent poured-in-place terrazzo flooring**].

Retain "Precast Terrazzo Units" paragraph below for precast terrazzo tiles, planks, stair treads, thresholds, sills, benches, planters, and other custom units. Detail profile, anchorage, and other requirements on Drawings or insert below.

Copy and re-edit "Precast Terrazzo Units" paragraph below for each product.

Insert drawing designation. Use designations on Drawings to identify each product.

* + - * 1. Precast Terrazzo Units <**Insert designation**>: Minimum 3/4-inch thick, epoxy terrazzo units. Comply with manufacturer's written instructions for fabricating precast units in sizes and profiles indicated. Reinforce units as required by unit sizes, profiles, and thicknesses and as recommended by manufacturer. Finish exposed-to-view edges and reveals to match face finish. Ease exposed edges to 1/8-inch radius.

Color, Pattern, and Finish: [**As selected by Director’s Representative from full range of industry colors**] [**Match Director’s Representative's sample**] [**Match adjacent poured-in-place terrazzo flooring**].

* + - 1. STRIP MATERIALS

See "Strip Materials" Article in the Evaluations for discussion of strip-material types, finishes, and placement.

* + - * 1. Thin-Set Divider Strips: L-type angle in depth required for topping thickness indicated.

Brass may react with resinous matrices. Verify that material retained in "Material" subparagraph below is acceptable to terrazzo manufacturers.

Material: [**As indicated**] [**White-zinc alloy**] [**Brass**] [**Aluminum**] [**Plastic, in color selected from full range of industry colors**].

Top Width: [**As indicated**] [**1/8 inch**] [**1/4 inch**].

* + - * 1. Heavy-Top Divider Strips: L-type angle in depth required for topping thickness indicated.

Bottom-Section Material: [**As indicated**] [**Galvanized steel**] [**Matching top-section material**].

Brass may react with resinous matrices. Verify that material retained in "Top-Section Material" subparagraph below is acceptable to terrazzo manufacturers.

Top-Section Material: [**As indicated**] [**White-zinc alloy**] [**Brass**] [**Aluminum**] [**Plastic, in color selected from full range of industry colors**].

Top-Section Width: [**As indicated**] [**1/8 inch**] [**1/4 inch**] [**3/8 inch**] [**1/2 inch**].

* + - * 1. Control-Joint Strips: Separate, double L-type angles, positioned back to back, that match material and color of divider strips and in depth required for topping thickness indicated.
        2. Accessory Strips: Match divider-strip width, material, and color unless otherwise indicated. Use the following types of accessory strips as required to provide a complete installation:

Base-bead strips for exposed top edge of terrazzo base.

Edge-bead strips for exposed edges of terrazzo.

Nosings for terrazzo stair treads and landings.

Retain "Abrasive Strips" paragraph below for terrazzo stair treads and landings.

* + - * 1. Abrasive Strips: [**Three-line**] [**Two-line**] [**One-line**] [**Abrasive nosing strip and two-line**] abrasive inserts at nosings. Silicon carbide or aluminum oxide, or combination of both, in epoxy-resin binder and set in channel.

Width: 1/2 inch.

Depth: As required by terrazzo thickness.

Length: [**4 inches less than stair width**] [**As indicated**].

Color: As selected by Director’s Representative from full range of industry colors.

* + - 1. MISCELLANEOUS ACCESSORIES
         1. Strip Adhesive: Epoxy-resin adhesive recommended by adhesive manufacturer for this use.
         2. Anchoring Devices:

Strips: Provide mechanical anchoring devices or adhesives for strip materials as recommended by manufacturer and as required for secure attachment to substrate.

Precast Terrazzo: Provide mechanical anchoring devices as recommended by fabricator for proper anchorage and support of units for conditions of installation and support.

* + - * 1. Patching and Fill Material: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.
        2. Joint Compound: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.
        3. Resinous Matrix Terrazzo Cleaner: Chemically neutral cleaner with pH factor between 7 and 10 that is biodegradable, phosphate free, and recommended by sealer manufacturer for use on terrazzo type indicated.

Consult NTMA and terrazzo manufacturers for sealer recommendations.

* + - * 1. Sealer: [**Slip- and stain-resistant, penetrating-type sealer that is chemically neutral; does not affect terrazzo color or physical properties; and is recommended by sealer manufacturer**] [**Acrylic**] [**Urethane**] [**Chemical-resistant epoxy**] [**Water based**].

Surface Friction: Not less than 0.6 according to ASTM D2047.

Acid-Base Properties: With pH factor between 7 and 10.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
          2. Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected.
       2. PREPARATION
          1. Clean substrates of substances, including oil, grease, and curing compounds, that might impair terrazzo bond. Provide clean, dry, and neutral substrate for terrazzo application.

Retain "Concrete Slabs" paragraph below for concrete substrates or insert requirements for other substrates such as wood or quarry tile; consult manufacturers for recommendations.

* + - * 1. Concrete Slabs:

Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with terrazzo.

Shot-blast surfaces with an apparatus that abrades the concrete surface, contains the dispensed shot within the apparatus, and recirculates the shot by vacuum pickup.

Repair damaged and deteriorated concrete according to terrazzo manufacturer's written instructions.

Use patching and fill material to fill holes and depressions in substrates according to terrazzo manufacturer's written instructions.

* + - * 1. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.

Retain "Preinstallation Moisture Testing" paragraph below for concrete substrates that incorporate standard-weight aggregates to determine if substrate is suitably dry or if a moisture-vapor-emission-control membrane is required. Concrete substrates incorporating lightweight aggregates always require a moisture-vapor-emission-control membrane.

* + - * 1. Preinstallation Moisture Testing:

Retain "Testing Agency" subparagraph below to identify who shall perform testing. If retaining second option in subparagraph, retain "Preinstallation moisture-testing reports" paragraph in "Informational Submittals" Article.

Testing Agency: Engage a qualified testing agency to perform tests.

Moisture Testing: Perform tests so that each test area does not exceed 200 sq. ft., and perform no fewer than three tests in each installation area and with test areas evenly spaced in installation areas.

Retain "Moisture-Vapor-Emission Test" or "Relative Humidity Test" subparagraph below, or both. Moisture-vapor emission test using anhydrous calcium chloride is less expensive and less reliable than relative humidity test using in-situ probes. According to NTMA, test results determined by the plastic-sheet test method or by hand-held moisture meters are unreliable.

Limits on acceptable water-vapor emission vary by manufacturer and material; verify with manufacturer.

Moisture-Vapor-Emission Test: Maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours when tested according to ASTM F1869 using anhydrous calcium chloride.

Relative Humidity Test: Maximum 75 percent relative humidity measurement when tested according to ASTM F2170 using in-situ probes.

Retain option in subparagraph below with "Moisture-Vapor-Emission-Control Membrane" subparagraph in "Epoxy-Resin Terrazzo" Article. For standard-weight concrete, consider specifying moisture-vapor-emission-control membrane as part of an allowance.

Proceed with terrazzo installation only after concrete substrates pass moisture testing[**or after installation of moisture-vapor-emission-control membrane on substrate areas that fail testing**].

Retain "Moisture-Vapor-Emission-Control Membrane" paragraph below with coordinating "Moisture-Vapor-Emission-Control Membrane" subparagraph in "Epoxy-Resin Terrazzo" Article. Moisture-vapor-emission-control membranes are required for concrete substrates that incorporate lightweight aggregates and may be needed for concrete substrates that incorporate standard-weight aggregates. For standard-weight concrete, consider specifying moisture-vapor-emission-control membrane as part of an allowance.

* + - * 1. Moisture-Vapor-Emission-Control Membrane: Install according to manufacturer's written instructions.

Retain one of two subparagraphs below, or both, to suit Project. If retaining second, coordinate with "Preinstallation Moisture Testing" paragraph.

Install on concrete substrates that incorporate lightweight aggregates.

Install concrete substrates that fail preinstallation moisture testing.

Retain "Substrate-Crack-Suppression Membrane" paragraph below with coordinating "Substrate-Crack-Suppression Membrane" subparagraph in "Epoxy-Resin Terrazzo" Article. Crack-suppression membranes are required for use over concrete substrates that incorporate lightweight aggregates and may be needed for concrete substrates that incorporate standard-weight aggregates. For standard-weight concrete, consider specifying crack-suppression membrane as part of an allowance.

* + - * 1. Substrate-Crack-Suppression Membrane: Install to isolate and suppress substrate cracks according to manufacturer's written instructions.

Prepare and prefill substrate cracks with membrane material.

Install membrane [**at substrate cracks**] [**to produce full substrate coverage**] in areas to receive terrazzo.

Retain subparagraph below if membrane is reinforced.

Reinforce membrane with fiberglass scrim.

* + - * 1. Protect other work from water and dust generated by grinding operations. Control water and dust to comply with environmental protection regulations.

Erect and maintain temporary enclosures and other suitable methods to limit water damage and dust migration and to ensure adequate ambient temperatures and ventilation conditions during installation.

* + - 1. EPOXY-RESIN TERRAZZO INSTALLATION
         1. Comply with NTMA's written recommendations for terrazzo and accessory installation.

Revise "Strip Materials" paragraph below to suit Project. Indicate location and spacing of strip materials on Drawings or insert below.

* + - * 1. Strip Materials:

Divider and Control-Joint Strips:

Locate divider strips in locations indicated.

Install control-joint strips [**back to back and directly above concrete-slab control joints**] [**in locations indicated**].

Install control-joint strips with 1/4-inch gap between strips, and install sealant in gap.

Install strips in adhesive setting bed without voids below strips, or mechanically anchor strips as required to attach strips to substrate, as recommended by strip manufacturer.

Accessory Strips: Install [**as required to provide a complete installation**] [**in locations indicated**].

Retain "Abrasive Strips" subparagraph below if required. Option is based on NTMA recommendations for precast stair treads.

Abrasive Strips: Install with surface of abrasive strip positioned 1/16 inch higher than terrazzo surface.

* + - * 1. Apply primer to terrazzo substrates according to manufacturer's written instructions.
        2. Place, rough grind, grout, cure grout, fine grind, and finish terrazzo according to manufacturer's written instructions.

Coordinate installed thickness with products and mixes specified in Part 2.

Installed Thickness: [**1/4 inch**] [**3/8 inch**] [**As indicated on Drawings**] nominal.

Terrazzo Finishing: Ensure that matrix components and fluids from grinding operations do not stain terrazzo by reacting with divider and control-joint strips.

Rough Grinding: Grind with 24-grit or finer stones or with comparable diamond abrasives. Follow initial grind with 60/80-grit stones or with comparable diamond abrasives.

Grouting: Before grouting, clean terrazzo with water, rinse, and allow to dry. Apply and cure epoxy grout.

According to NTMA, the standard finish on portland cement terrazzo is an 80-grit carborundum polish. 120 grit produces a more highly polished surface and tends to deepen and darken the appearance of aggregates.

Fine Grinding/Polishing: Delay fine grinding until heavy trade work is complete and construction traffic through area is restricted. Grind with [**80**] [**120**]-grit stones or with comparable diamond abrasives until grout is removed from surface.

Installation Tolerance: Limit variation in terrazzo surface from level to 1/4 inch in 10 feet; noncumulative.

* + - * 1. Install and finish poured-in-place terrazzo stairs at the same time the adjacent terrazzo flooring is installed.
        2. Install and finish poured-in-place terrazzo base at the same time the adjacent terrazzo flooring is installed.
      1. PRECAST TERRAZZO INSTALLATION
         1. Install precast terrazzo units using method recommended in writing by NTMA and manufacturer unless otherwise indicated.
         2. Do not install units that are chipped, cracked, discolored, or improperly finished.
         3. Seal joints between units with [**joint compound matching precast terrazzo matrix**] [**joint sealant**].
      2. REPAIR
         1. Cut out and replace terrazzo areas that evidence lack of bond with substrate. Cut out terrazzo areas in panels defined by strips and replace to match adjacent terrazzo, or repair panels according to NTMA's written recommendations, as approved by Director’s Representative.
      3. CLEANING AND PROTECTION
         1. Cleaning:

Remove grinding dust from installation and adjacent areas.

Wash surfaces with cleaner according to NTMA's written recommendations and manufacturer's written instructions; rinse surfaces with water and allow them to dry thoroughly.

* + - * 1. Sealing:

Seal surfaces according to NTMA's written recommendations.

Apply sealer according to sealer manufacturer's written instructions.

* + - * 1. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer, that ensure that terrazzo is without damage or deterioration at time of Substantial Completion.

END OF SECTION 096623