



SECTION 09 66 23 – RESINOUS MATRIX TERRAZZO FLOORING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes resinous matrix (epoxy) terrazzo.

1.2 PERFORMANCE REQUIREMENTS

- A. Static Coefficient of Friction: For terrazzo installed on walkway surfaces, provide finished installation with the following values as determined by testing per ASTM C 1028:
 - 1. Level Surfaces: Minimum 0.6.
 - 2. Step Treads: Minimum 0.6.
 - 3. Ramp Surfaces: Minimum 0.8.

1.3 SUBMITTALS

- A. Product Data: Submit product data for each material indicated.
- B. Shop Drawings: Submit shop drawings showing the extent of each terrazzo matrix, type, size and layout of divider strips, control joint strips, and edge strips
 - 1. Indicate layout of abrasive strips at stair nosings.
 - 2. Indicate layout of stair treads, risers, and landings.
 - 3. Large scale details of precast terrazzo jointing and edge conditions, including anchorage details.
- C. Samples: Submit samples of each of the following items for each type, color, and pattern of terrazzo and accessory required and in size indicated below. Sample submittals shall be for color, pattern and texture only. Compliance with other requirements is the responsibility of the Contractor.
 - 1. Epoxy Terrazzo: 6-inch- (150-mm-) square Samples.
 - 2. Precast Epoxy Terrazzo Base: 12-inch- (300-mm-) long Samples.
 - 3. Precast Epoxy Terrazzo Tread: 12-inch- (300-mm-) long Samples.
 - 4. Precast Epoxy Terrazzo Riser: 12-inch- (300-mm-) long Samples.
 - 5. Accessories: 6-inch- (150-mm-) long Samples of each exposed strip item required.

NOTE: With previous terrazzo installations at the airport, a minimum of three sample runs have been required in order to achieve the approved design.

- D. Field Testing: Submit pre-installation relative humidity probe readings and pH testing for information only. Readings shall be prepared in accordance with ASTM F2170.



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- E. Maintenance Data: Submit copies of instructions for maintenance of each type of terrazzo.
- F. Warranty: Submit sample copies of the Moisture Vapor Transmission (MVT) warranty to verify compliance with specification. Submit executed copies of epoxy terrazzo warranty as specified herein.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced Installer who is a current NTMA member in good standing and who has completed a minimum of 3 terrazzo installations similar in material and extent to that indicated for Project – as determined by LAWA – over the last 5 years and that have resulted in construction with a record of successful in-service performance.

NOTE: A letter from the NTMA dated within 30 days of the bid, stating same, must be submitted with the bid. Any active investigations of contractor's work must be noted in this letter.

- B. Standard: Except as modified by governing codes and by the Contract Documents, comply with applicable provisions and recommendations of the NTMA Terrazzo Information Guide Specification.
- C. Sample Installations:
 - 1. Following acceptance of samples, provide sample installations of the following where directed by the LAWA.
 - a. Floors: Cast a typical module (minimum 10' x 10') of interior flooring including divider strips.
 - 2. Sample installations shall be complete with all bedding, jointing, and sealants as shown in accordance with the final shop drawings. Sample installations shall be reviewed by the Architect for acceptance of terrazzo assemblies including jointing and workmanship. Replace unsatisfactory work as directed. Maintain sample installations during construction as a standard for judging acceptability of terrazzo work. Properly finished and maintained sample installations shall be retained as a portion of the completed work.

1.5 PROJECT CONDITIONS

- A. Deliver materials, other than bulk materials, in manufacturer's unopened containers, fully identified with trade name, grade and color.
- B. Store materials above grade, protected from the weather, soiling or damage from any source. Store in accordance with manufacturer's instructions.
- C. Wrap precast units individually in polyethylene film or other non-staining protective cover and mark each unit for proper identification of installed location.



1.6 PROTECTION

- A. Protect terrazzo work throughout the construction period so that it will be without any indication of use or damage at the time of acceptance by LAWA.

1.7 WARRANTY

- A. Manufacturer and installer shall supply to LAWA a three year Joint and Several Warranty from the date of substantial completion stating that the Moisture Vapor Barrier shall protect the epoxy terrazzo installation from moisture related blistering or dis-bondment and that in the event of defects related to moisture vapor transmission within the stipulated period, the manufacturer and installer shall jointly or severally effect all repairs or replacement necessary to remedy defects at the convenience of, and no cost to LAWA.

PART 2 - PRODUCTS

2.1 EPOXY TERRAZZO

- A. Epoxy Terrazzo Material Products and Manufacturers: The epoxy resin terrazzo specifications are based on Terroxy Resin System by Terrazzo and Marble (T & M) Supply Companies.
 - 1. The following terrazzo systems and manufacturers are capable of providing epoxy resin terrazzo flooring complying with the requirements of the Contract Documents.
 - a. General Polymers; Thin-Set Epoxy Terrazzo #1100 Flooring System.
 - b. Crossfield Products Corp., Dex-O-Tex Division; Dex-O-Tex Cheminert Terrazzo.
 - c. Master Terrazzo Technologies, LLC; Morricite.
 - d. Terrazzo and Marble (T & M) Supply Companies; Terroxy Resin Systems – Thin-set Epoxy Terrazzo

- 2. System Performance: The epoxy resin flooring system shall possess the following properties:

Compressive Strength, ASTM D695	10,000 psi
Water Absorption, ASTM D570	0.10 %
Tensile Strength, ASTM D638	3,000 psi
Flexural Strength, ASTM D790	4,500 psi
Adhesion, ACI 503R	350 psi, 100% concrete failure
Hardness, ASTM D2240	65-85 Shore D
Impact Resistance – MIL-D-3134, Sec. 4.7.3	Withstands 16 ft/lbs. no chipping, cracking, spalling or loss of adhesion.
Abrasion Resistance, ASTM D4060, CS 17 Wheel	70-90 milligrams lost
Slip Resistance	Meets ADA Standards



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Critical Radiant Flux, ASTM D648	.90
Thermal coefficient of linear expansion, ASTM D696	25 x 10 ⁻⁶ in/in/ degree F.

- B. Moisture Vapor Barrier: One of the following:
- Moisture Vapor Treatment; Terrazzo and Marble (T & M) Supply Companies.
 - FasTop MVT or AquArmorS; General Polymers.
- C. Flexible Epoxy Membrane (Crack Bridging Membrane): 100% solids for crack preparation followed by full coverage application.
- Products: One of the following:
 - Isocrack Membrane; Terrazzo and Marble (T & M) Supply Companies.
 - 3556 EPO-FLEX Flexible Epoxy Membrane; General Polymers.
 - System Performance: The flexible epoxy membrane shall possess the following properties:

Tensile Strength, ASTM D412	1,000-1,300 psi
Elongation at Break, ASTM D412	130-145%
Adhesion, ACI 503R	350 psi, 100% concrete failure
Hardness, ASTM D2240	23 Shore D
Thermal Cycling, ASTM C884 (24 hours, -21C to +25C)	No Cracking
Flammability	Self-extinguishing over concrete
VOC	Zero

The epoxy elastomer must be free of solvent, external plasticizers, coal tar, known carcinogens, rubber compounds or nitrile butadienes
- D. Fabric Reinforcing: Fiberglass of type and manufacture recommended and acceptable to the matrix manufacturer.
- FS38-4.4 Fiberglass Scrim; General Polymers.
- E. Aggregates: Natural, sound, crushed stone chips, mother of pearl, glass, plastic, and metal filings with colors selected and graded to match Architect's samples, but with maximum size within limits of workability for terrazzo thickness indicated.
- Sizes shall be **#1's and #0's only**, conforming with N.T.M.A. standards.
 - Abrasion and impact resistance shall not exceed 40% loss per ASTM C131.
 - 24 hour absorption rate not to exceed 0.75 percent.
 - Chips shall contain no deleterious or foreign matter.
 - Dust content less than 1% by weight.



- 6. Obtain and stockpile each aggregate material from a single source of consistent quality in appearance and physical properties for the entire project.

- F. Epoxy Fill Mortar: 100% Solids fill mortar system including blended aggregate of a type recommended by the epoxy resin terrazzo manufacturer. One of the following:
 - 1. Terroxy Fill; Terrazzo and Marble (T & M) Supply Companies.
 - 2. 3520 Epoxy Terrazzo Matrix as the binder resin mixed with dry silica sand; General Polymers.

- G. Finishing Grout: 100% solids resin-based grout with filler and pigments as recommended by matrix manufacturer. One of the following:
 - 1. Terroxy Grout; Terrazzo and Marble (T & M) Supply Companies.
 - 2. 3520 Epoxy Terrazzo Matrix with 5271 Terrazzo Grout Additive; General Polymers.

- H. Substrate Primer: 100% solids, moisture insensitive, two-component resin recommended by matrix manufacturer. No solvent containing primers are allowed.

2.2 MIXES

- A. Toppings: Adjust topping mixes as required to obtain LAWA’s acceptance for each type, color, pattern and finish. Refer to the drawings and finish schedules for the extent of each topping and finish; the following topping mixes were used to develop the Architect’s samples. The samples were prepared by and reflect sample controls numbers of using Terrazzo and Marble (T & M) Supply Companies terrazzo materials. Each precast terrazzo unit shall be composed of a single mix design prepared using the matrices specified, precast units consisting of a face mix and a backup mix shall not be permitted. Adjust Portland cement precast mixes, for bases, treads and riser units, as required to obtain LAWA’s acceptance for matching the type, color, pattern and finish of the epoxy matrix type, color pattern and finish indicated on the drawings for the base, tread and riser units.
 - 1. TR-01: Refer to Sample #1 in the Terrazzo Chart below.
 - 2. TR-02: Refer to Sample #2 in the Terrazzo Chart below.

NOTE: A white field with dark aggregate will maintain a clear appearance longer. In a multi-color design, a matrix with a repetition of aggregate is helpful in order to create a more unified appearance.

TERRAZZO CHART

Sample #1		Chip Blend		
Matrix Color	Resin Color # & Fanfold	Aggregate	Size	%
	Resin Color selected to match		0’s	90
			0’s	10



Sample #2		Chip Blend		
Matrix Color	Color # & Fanfold	Aggregate	Size	%
	Resin Color selected to match		1's & 0's	90
			1's, & 0's	10

B. Precast Terrazzo Base and Stair Tread/Riser Setting Beds:

1. Cement Setting Bed Mix: 226 Thick Bed Mortar Mix; Laticrete International Inc.
2. Liquid Latex Additives: Laticrete 3701 Liquid Latex Mortar Admix.
3. Mixing: Comply with the manufacturers printed recommendations for either machine or hand mixing of setting bed mixes.
 - a. Mix 6 bags of cement setting bed mix to 1 pail (5 gal.) of liquid latex additive. Adjust quantity of liquid latex additive to bring the cement setting bed to the proper consistency for placing.
4. Welded Wire Fabric for Setting Bed Reinforcement at Metal Stair Risers and Treads: ASTM A185, 2 in. x 2 in. x 16 gage, galvanized.

C. Grout for Precast Items: Polymer-modified tile grout composed of ethylene vinyl acetate, in dry, redispersible form, prepackaged with other dry ingredients to which only water must be added at Project site, and complying with ANSI A118.6, custom colored to match adjacent precast terrazzo tile units.

NOTE: the mix design shall consist no more than 40% glass / mirror. Recycled glass is not permitted. All glass/mirror or aggregate shall be no larger than #1, (#0s and #1s only).

The Contractor shall also premix all terrazzo ingredients which are able to be combined prior to installation (Epoxy Part A and B and aggregate mixes). This premix process shall occur in a clean and neat factory or laboratory environment. Quantities should be carefully measured on certified/calibrated scales and mixing shall follow laboratory best practices. The resulting premixed ingredients shall then be packaged in clean, clearly labeled, hard sided containers in ratios whereby labor staff can combine in the field with no need to calculate or measure. LAWA or its authorized third party inspectors shall have continuous and unabated access to witness/inspect the factory/laboratory premix and packaging processes.

2.3 ACCESSORIES

- A. Divider and Stop Strips:** White alloy zinc, 1/8" in. thick x depth as indicated for terrazzo topping. Angle or "T" - types. Verify compatibility of divider and stop strips with resin supplier prior to ordering.



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1. Control Joint Strips: Laminations of 16 gage zinc, back to back strips infilled with Flexible Epoxy Membrane pigmented to match resin color of epoxy terrazzo.
- B. Cleaner: A neutral chemical cleaner, specially compounded for cleaning terrazzo of the types indicated, as recommended by the manufacturer of the cleaner with the following minimum characteristics.
 1. pH factor between 7 and 10.
 2. Biodegradable and phosphate free.
 3. Free form crystallizing salts or water soluble alkaline salts.
- C. Floor Sealer: Waterbased, colorless, stain-resistant penetrating sealer with Ph factor between 7 and 10, that does not affect color or physical properties of terrazzo surface, and which will provide an anti-slip coefficient of friction of greater than 0.6.
 1. Product: "Scotchgard Stone Floor Protector"
 2. LAWA approved Equal
- D. Joint Sealants: Two-Part Polyurethane Sealant (Self Leveling), refer to Section 079200, JOINT SEALANTS.
- E. Channels to receive abrasive inserts at Precast Stair Nosings: 16 gauge aluminum channel.
- F. Abrasive Inserts: One line composition strips filled with 100 or finer carborundum, aluminum oxide or silicon carbide, black, mixed 4 parts to 1 with a binding material.
- G. Reinforcing, Anchors and Fasteners for Precast Units:
 1. Reinforcing for Treads and Risers: ASTM A615, grade as selected by fabricator. Reinforcing adjacent to the exposed surface of panels is to be positioned and firmly held in place by hangers, or other means without the use of form-contact bar supports.
 2. Welded Wire Fabric for Treads and Risers: ASTM A185, 2 in. x 2 in. x 16 gage, galvanized.
 3. Anchors and Fasteners: All anchors, clips, shapes, fasteners, dowels, cramps, and accessories for erecting precast terrazzo units shall be galvanized steel devices of grade, type, size and number required to attach precast terrazzo to supporting stair substrates.
- H. Precast Portland Cement Terrazzo Base, Tread and Riser Materials (To be used when proposing Alternate):
 1. Portland Cement: ASTM C150, Type I, non-air entraining, non-staining white and gray as required to match Architect's epoxy terrazzo samples. Obtain cement from a single source for all work of one color.
 2. Sand: ASTM C33 for fine aggregates as required to match Architect's epoxy terrazzo samples.
 3. Water: Fresh, clean and potable.
 4. Aggregates, Glass, Plastic and Shell Materials: As required to match Architect's epoxy terrazzo samples.



5. Pigments: Pure mineral pigments, resistant to alkalis, nonfading and weatherproof, colors as required to match Architect's epoxy terrazzo samples.

2.4 PRECAST UNIT FABRICATION

- A. Precast Terrazzo Bases: Fabricate precast terrazzo bases from epoxy terrazzo materials to the sizes, shapes and profiles shown and from the terrazzo mix(es) indicated.
 1. The minimum thickness of the precast terrazzo base shall be ½”.
 2. Forms: Construct forms of non-staining metal, fiberglass reinforced polyester, plywood, or other acceptable material. Fabricate and reinforce forms for close control of dimensions and details. Construct forms tightly to prevent leakage of mixes. Form joints will not be permitted on faces exposed to view in the finished work.
 3. Mixing and Placing: Mix terrazzo mixes to distribute fine and coarse aggregate evenly throughout. Place terrazzo so as to prevent segregation in the forms.
 4. Curing: Allow units to cure.
 5. Casting Tolerances: As required to achieve installation tolerances. Units which have bowed, warped, or curled shall not be acceptable.
- B. Precast Terrazzo Treads and Risers: Fabricate precast terrazzo treads and risers from epoxy terrazzo materials to the sizes, shapes and profiles shown to match the epoxy terrazzo mix indicated for treads and risers.
 1. The minimum thickness of the precast terrazzo stairs and treads shall be 1-1/2”. Provide 2 lines of abrasive insert at stair tread nosing.
 2. Forms: Construct forms of non-staining metal, fiberglass reinforced polyester, plywood, or other acceptable material. Fabricate and reinforce forms for close control of dimensions and details. Construct forms tightly to prevent leakage of mixes. Form joints will not be permitted on faces exposed to view in the finished work.
 3. Reinforcement: Place welded wire and reinforcing bars of size and spacings as required to resist shrinkage, temperature and handling stresses. Support and space reinforcement using devices to ensure that it will remain positioned in the precast terrazzo units as required. Keep reinforcement from the edges and surfaces of the units.
 4. Mixing and Placing: Mix terrazzo mixes to distribute fine and coarse aggregate evenly throughout. Place terrazzo so as to prevent segregation in the forms.
 5. Curing: Allow units to cure.
 6. Casting Tolerances: As required to achieve installation tolerances. Units which have bowed, warped, or curled shall not be acceptable.
- C. Surface Treatment:
 1. Finish surfaces exposed to view to match accepted samples in all respects. Provide smooth joints and square edges.
 2. Finish: Allow terrazzo to obtain sufficient strength prior to grinding and as required to withstand handling stresses and to produce a terrazzo finish consistent with the accepted samples. Protect corners and edges to preserve uniform, straight arrisses and corners.



Grind in a continuous operation, using grinding equipment to achieve a uniform appearance. Do not change equipment, materials, procedure or operating personnel during the course of the grinding work for the entire Project. Discard and replace terrazzo units which develop any irregular penetration or appearance, or swirl marks as a result of grinding. Select type of grit gradation(s) and speed of operation to achieve the following:

- a. Match finish of cast in place epoxy terrazzo as specified under Part 3 – Execution below.
3. Abrasive Inserts for Stair Treads:
- a. Carefully mask terrazzo on either side of abrasive channel to protect finished terrazzo.
 - b. Clean all foreign matter from channel.
 - c. Trowel abrasive mix into channel with finished elevation approximately 1/16" above terrazzo tread.
 - d. After abrasive mix has set, remove masking material and allow to cure.

PART 3 - EXECUTION

3.1 CONDITION OF SURFACES

- A. Examine the substrates and adjoining construction and the conditions under which the Work is to be installed. Do not proceed with the Work until unsatisfactory conditions have been corrected. Examine areas to receive terrazzo for:
1. Defects in existing work that affect proper execution of terrazzo work.
 2. Deviations beyond allowable tolerances for the concrete slab work. The substrate shall not exceed ¼" in a 10'-0" span. When placing a 10 foot straightedge anywhere on the substrate, at no point shall the gap between the straightedge and the substrate exceed ¼".
 3. Ensure that the building expansion joints in the floor area are raised or lowered to actual finish elevation of terrazzo.
 4. Ensure that drains in installation area are functional and raised or lowered to actual finish elevation of terrazzo.

3.2 PREPARATION

- A. General: Comply with NTMA specifications and recommendations, unless otherwise shown or specified for preparation of substrate.
- B. Substrates to Receive Epoxy Terrazzo: After the removal of existing floor coverings in areas to receive the terrazzo work, and before the terrazzo flooring installation, visit the jobsite to evaluate substrate condition. The evaluation shall include a determination of the suitability of the substrate to receive the epoxy terrazzo materials and to test for moisture and alkalinity of the substrate. Test for moisture by relative humidity probe and digital meter method according to ASTM F 2170 "Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using In-situ Probes" and the probe manufactures instructions. Use a minimum of 1 probe



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for every 5,000 sf of surface to receive terrazzo flooring. Proceed with the epoxy floor system installation only after substrates have a maximum relative-humidity-measurement reading of 75 percent in 24 hours. If the pH of the slab is 10 or lower, notify the manufacturer for preparations required to ensure a good bond.

1. Probe Manufacturer: A relative humidity probe kit and manufacturer known to comply with the requirements includes "The Rapid RH Probe" manufactured by Wagner Electronic Products, Inc., Rogue River, OR. (800) 207-2164 (v).

C. Surface Treatment:

1. Prepare slab substrates, (*including any existing cementitious terrazzo*) to "open" surface pores by means of light scarification, medium shot blast or medium scarification with a vacuum unit. Surface preparation results shall achieve a minimum Concrete Surface Profile (CSP) of 5 according to International Concrete Repair Institute Guideline No. 03732. Remove all contaminating or bond breaking substances including but not limited to dust, laitance, curing compounds, coatings, sealers, oil, grease, existing floor covering adhesives and mastics. All oil or grease not removed by scarification or blasting shall be removed by either detergent scrubbing with heavy duty cleaner/degreaser, low pressure water cleaning, steam cleaning, or chemical cleaning methods in accordance with the manufacturers written instructions. All spalled or deteriorated slab surfaces shall be mechanically removed by scabbling or chipping hammers. Acid etching is not acceptable.

NOTE: Many of the existing sub-floor areas of the existing Terminals are not level and require extensive floor prep. All existing finishes such as but not limited to Frittile are to be removed from the concrete slab.

2. Apply moisture vapor barrier across the entire area to receive the epoxy terrazzo in accordance with the manufacturer's recommendations.
3. Repair or level damaged slab surfaces with epoxy fill mortar. Latex fills or self-leveling underlayments are not acceptable.
4. Flexible Epoxy Membrane (Crack Bridging Membrane) Placement:
 - a. Install flexible epoxy membrane at 40 mils thickness over the moisture vapor barrier and embed fabric reinforcement. Follow the specific recommendations of the flooring manufacturer for detailing at terminations, construction control joints, construction joints, building columns, and base conditions. Thoroughly mix flexible epoxy membrane and apply to prepared moisture vapor coated slab substrates according to manufacturer's instructions. Allow membrane to level until no ridges are showing.
5. Cracks and non-expansion joints greater than 1/16" wide after surface preparation shall be prepared until sound and treated with membrane materials in accordance with the instructions of the epoxy terrazzo manufacturer and as follows. Allow in base bid for above crack detailing as follows - 5% of lineal footage of total project square footage for combined Type 1 & 2, and 3% of lineal footage of Type 3. (i.e., a 10,000 sq ft project



would allow for a combined 500 lineal feet of Type 1 & 2 repairs and 300 lineal feet of Type 3 repairs.

- a. Type 1 Crack Detailing: Hairline cracks shall receive detail coat of epoxy primer with 6" fabric reinforcement.
- b. Type 2 Crack Detailing Fill cracks greater than hairline but less than 1/16" wide after surface preparation with neat, epoxy membrane. Place detail coat of epoxy membrane over crack and embed 12" fiberglass cloth. Lightly abrade or solvent wipe treated cracks prior to applying primer.
- c. Type 3 Crack Detailing Fill cracks greater than 1/16" with flexible epoxy membrane. Place 25-30 mil detail coat so that flexible epoxy membrane extends at least 9" to 12" on each side of crack or joint. After flexible epoxy membrane has leveled, lay precut reinforcing fabric into wet membrane. Smooth cloth with a flat steel trowel, allowing cloth to be encapsulated but remain exposed on the surface of flexible epoxy membrane. Lightly abrade or solvent wipe treated cracks prior to applying primer.

NOTE: For the floor leveling purposes, the Bid cost for Epoxy Terrazzo shall include the price for installing a 5/8" minimum epoxy sand level.

3.3 INSTALLATION

- A. General: Comply with NTMA specifications and recommendations, unless otherwise shown or specified for installation of strips, placing, curing, grinding, and finishing of terrazzo. Make provisions for protecting adjacent work from terrazzo placement and finishing.
 1. Extend terrazzo work into recesses and under equipment in the spaces shown or scheduled to receive terrazzo. Form a complete covering without interruptions or seams, except provide divider strips where shown. Place and finish terrazzo uniformly and neatly around obstructions so as to achieve continuous color, pattern and finish throughout the Work.
 2. Complete terrazzo work prior to contiguous work which might be damaged by water or other materials used.
- B. Epoxy Terrazzo:
 1. Control Joints, Stop Strips and Divider Strips:
 - a. Control Joints: Place back to back angle divider strips **directly over concrete control joints** leaving a space appropriate for anticipated movement – typically 1/4" – 3/8". Fill gap between control joints with divider strip joint sealant. If flexible membrane was placed greater than 72 hours before placement of epoxy terrazzo, solvent wipe completely prior to installing epoxy primer and terrazzo.

NOTE: All control joints to be carried to the surface.



- b. Stop Strips: Install stop strips at perimeter of epoxy terrazzo flooring fields. Adhere stop strips with substrate primer – do not fasten to concrete. If flexible membrane was placed greater than 72 hours before placement of epoxy terrazzo, solvent wipe completely prior to installing epoxy primer and terrazzo.
- c. Divider Strips: Place divider strips directly over concrete where indicated on the drawings. Adhere divider strips with substrate primer – do not fasten to concrete. If flexible membrane was placed greater than 72 hours before placement of epoxy terrazzo, solvent wipe completely prior to installing epoxy primer and terrazzo.

NOTE: All pours to be to the divider strips. Phased pours in areas within the divider strips shall not be allowed unless directed otherwise by LAWA. The leg of the divider strip shall be fully bonded to the slab. When two divider strips are joined, the ends shall touch and align.

- 2. Placing Epoxy Terrazzo:
 - a. Clean and prepare substrate to comply with NTMA specifications for type of terrazzo application indicated. Clean substrate of loose chips and foreign matter.
 - b. Priming: Apply epoxy primer evenly over prepared flexible membrane at the rate of 200-300 square feet per gallon, to thoroughly wet surface, but avoiding "ponding" the material.
 - c. For thin-set terrazzo topping, comply with resin manufacturer's recommendations for proportioning mixes.
 - d. Comply with NTMA guide specifications previously referenced under "Thin-Set Terrazzo Materials" and with matrix manufacturer's directions for installing thin-set terrazzo. Match Architect's samples and provide total material thickness of not less than 3/8". Allow cure per manufacturer's recommendations prior to grinding operations.
 - 3. Grinding: Exercise extreme care to ensure fluids from grinding operation do not react with dividers and strips to produce a stain on aggregate. Delay grinding until heavy trade work is completed and construction traffic through the area is restricted.
 - a. Rough Grinding: Grind with 24 or finer grit stones or with comparable diamond plates.
 - b. Intermediate Grinding: Follow initial grind with 80 or finer grit stones.
 - c. Grouting: Cleanse floor with clean water and rinse thoroughly. Remove excess rinse water by wet vacuum and machine until completely dry. Apply epoxy grout to fill voids.
 - d. Fine Grinding: Grind with **120** or finer grit stones until all grout is removed from surface. Upon completion terrazzo shall show a minimum of 70% to 75% of marble chips.
- C. Precast Terrazzo:
- 1. Preparation: Clean precast terrazzo surfaces which have become dirty or stained prior to setting to remove soil, stains and foreign materials. Clean precast terrazzo by thoroughly



scrubbing with fiber brushes followed by a thorough drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh filler or abrasives.

2. Installation, General:
 - a. Employ only skilled and experienced workmen to install the precast terrazzo work. Use carborundum or diamond tipped power saws to cut precast terrazzo units which need to be fitted to existing field conditions.
 - b. Set precast terrazzo units to comply with requirements indicated on drawings and final shop drawings. Install anchors, supports, fasteners and other attachments indicated or necessary to secure precast terrazzo work in place. Shim and adjust anchors, supports and accessories to set precast terrazzo work accurately in locations indicated with uniform joints of widths indicated and with edges and faces aligned.
 - c. Installation Tolerances:
 - 1) Joint Widths: +/- 1/16".
 - 2) Variation from Plumb: +/- 1/16".
 - 3) Variation from Level: +/- 1/8" in 20', non-cumulative.
 - 4) Piece Alignments (Edge to Edge): +/- 1/32".
3. Installation of Wall Base: Install base where indicated, after placing floors, and in accordance with NTMA, and the applicable provisions of TCA W243 and ANSI A108.5. Tamp units into setting bed to achieve a full bond without voids. Level units at joints. Grind at joints to remove any minor discrepancies in level of units. Replace warped, stained, damaged and non-matching units as directed. Grout joints, except those shown to receive sealant or divider strips, with a mixture of Portland cement, pigment and water, matching the matrix of the unit being grouted.
4. Installation of Stair Tread/Risers: Place setting bed on steel pan and poured in place concrete type stairs where shown and in accordance with NTMA, and the applicable provisions of TCA S151 Method F111 (for steel pan stairs) and Methods F112 and W211 (for concrete stairs) and ANSI A108.1A. Tamp units into setting bed to achieve a full bond without voids. Level units at joints. Grind at joints to remove any minor discrepancies in level of units. Replace warped, stained, damaged and non-matching units as directed. Grout joints, except those shown to receive sealant or divider strips, with a mixture of Portland cement, pigment and water, matching the matrix of the units being grouted.

3.4 CLEANING, SEALING AND PROTECTION

- A. Clean terrazzo after installing and grinding operations are completed by thoroughly washing all terrazzo surfaces with a neutral cleaner. Rinse with clean water and allow surface to dry thoroughly. Apply sealer per manufacturer's recommendations.
- B. Apply 3M Stone Floor Protector Sealer in two coats at the coverage rate of 2500 sq./gallon per coat in compliance with sealer manufacture instructions.**

END OF SECTION 09 66 23