SECTION 096623 – TERRAZZO FLOORING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of the Contract, including General and Special Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY
A. Section Includes:
   2. Related accessories and Epoxy-Sand Floor Fill.

1.3 DEFINITIONS
A. Aggregate: Marble chips or other types of aggregate.
B. NTMA: National Terrazzo and Mosaic Association, Inc.
C. Epoxy-Sand Fill Underbed: Mixture of Iron Silicate Copper Slag (Kleen Blast which is silica free), Water & Epoxy Resin to a fairly dry consistency, spread, compacted and screeded over Structural Concrete on Metal Deck Substrate to provide a flat and level surface to receive final flooring installation.

1.4 PREINSTALLATION MEETINGS
A. Pre-installation Conference: The Contractor shall conduct a conference at the Project Site before installation.
   1. Review methods and procedures related to terrazzo including, but not limited to, the following:
      a. Inspect and discuss condition of substrate and other preparatory work performed by other trades.
      b. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      c. Review terrazzo mixes and patterns.
d. Review custom terrazzo mixes, designs and patterns.

2. The Contractor shall invite the architect and Owner to attend.

1.5 ACTION SUBMITTALS

A. Product Data: Submit product data for each type of product required for installation including:

1. Strip materials.
2. Epoxy Fill materials and mixing ratios.
3. Sealer.

B. Shop Drawings: Prepare and submit shop drawings that include plans, elevations, sections, component details, and attachments to other work. Include terrazzo installation requirements. Show layout of the following:

1. Divider strips including width of face.
2. Control and expansion joint strips including width of face.
3. Base and border strips including width of face
4. Accessory strips.
5. Terrazzo Patterns.

C. Samples: Contractor shall prepare and submit a maximum of four (4) samples, 6 x 6 inches in size for each color and type of terrazzo specified.

D. The Contractor to provide to the Owner all aspects of the terrazzo mix design, the contact information for the supplier of the materials and for the contractor to relinquish all rights and ownership of the mix design in writing to the Owner.

E. Initial Selection Sample: Owner’s Control Samples listed in Article 3.7.

F. 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 size indicated below:

1. Terrazzo: 6 x 6 inch samples.
2. Accessories: 6 inch long Samples of each exposed strip item required.
3. Cove base samples
1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: Contractor shall submit two (2) copies of qualification data.
   1. Include list of projects indicating name and location of project, name of Owner, name and contact information for Contractor. Provide name and contact information for Owner.
   2. Adhere to NTMA standards.

B. Material Certificates:
   1. Epoxy Resin: For each type of resin required indicating that materials meet specification requirements by manufacturer.
   2. Aggregate: For each type of aggregate required indicating compatibility with terrazzo mix, signed by aggregate supplier.
   3. Epoxy Sand Fill setting bed Material:

C. Material Test Reports: For moisture and / or relative humidity of substrate.

D. Installer Certificates: Signed by manufacturers certifying that installers comply with requirements.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Literature: Contractor shall submit two (2) copies of maintenance recommendations from NTMA.

1.8 QUALITY ASSURANCE

A. Acceptable Epoxy Resin Manufacturer:
   1. Experienced in manufacturing Epoxy Resin in accordance with NTMA standards and with a record of successful in-service performance, as well as sufficient production capacity to produce required materials.
   2. Engage an installer who is certified in writing by terrazzo manufacturer as qualified to install manufacturer's products.

B. Acceptable Contractor: A Contractor and Installer whose work has resulted in construction with a record of successful in-service performance. Installer shall have completed terrazzo installations within the past ten (10) years of scale and complexity similar to the proposed installation. Contractor shall have a min. of 10 years of experience in Terrazzo Installation. Contractor shall follow the Terrazzo Standards set by NTMA.
C. Terrazzo Standards: Contractor shall furnish materials and install Terrazzo according to NTMA'S "Terrazzo Specifications and Design Guide" and with written recommendations for terrazzo type indicated unless more stringent requirements are specified.

D. Source Limitations for Aggregates: Contractor shall obtain each color, grade, type and variety of granular materials from single source from single manufacturer to provide materials of consistent quality in appearance and physical properties. Provide secondary materials including patching and fill material, joint sealant, and repair materials of type and from source recommended by manufacturer of primary materials.

E. 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.

F. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockups for terrazzo including accessories.
   a. Size: Minimum 100 sq. foot of typical poured-in-place flooring and base condition for each color and pattern in location as directed by Owner and agreed to with the Contractor. Mock-ups shall include any applicable divider strips and accessories.
   b. Approved mockups may become part of the completed work if undisturbed at time of Substantial Completion.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Owner specifically approves such deviations in writing.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in supplier's original wrappings and containers, labeled with sources or manufacturer's name, material or product brand name, and lot number if any.

B. Store materials in their original, undamaged packages and containers, inside a well-ventilated area protected from weather, moisture, soiling, extreme temperatures, direct sunlight and humidity.

1. Epoxy components shall be stored in a space where the ambient temperature can be maintained 60 and 90 deg. F. before use.
1.10 FIELD CONDITIONS

A. Environmental Limitations: Comply with manufacturer's written instructions for substrate temperature, ambient temperature, moisture, ventilation, and other conditions affecting terrazzo installation.

B. Field Measurements: Verify actual dimensions of construction contiguous with precast terrazzo by field measurements before fabrication.

C. Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during terrazzo installation.

D. Close spaces to traffic during terrazzo application and for not less than 24 hours after application unless manufacturer recommends a longer period.

E. Control and collect water and dust produced by grinding operations. Protect adjacent construction from detrimental effects of grinding operations.

1.11 WARRANTY

A. One (1) year from date of final completion of the Project.

PART 2 - PRODUCTS

2.1 EPOXY-RESIN Poured IN PLACE TERRAZZO

A. Epoxy-Resin Terrazzo: Comply with NTMA's "Terrazzo Specifications and Design Guide" and manufacturer's written instructions for matrix and aggregate proportions and mixing. The "Basis of Design" is to Match Owner's Control Samples.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

   a. General Polymers Corporation; Terrazzo 1100.
   b. Master Terrazzo Technologies LLC; Morricite.
   c. Terroxy Resin Systems, Terrazzo & Marble.
   d. Owners approved alternate manufacturer.

2. Thickness: 3/8 inch nominal.

3. Formulated Mix Color and Pattern: As detailed and called out on Contract Documents along with preliminary Samples provided to Owner.

4. Custom Mix Color and Pattern: To match "Control" samples and Contract Documents by Owner.
B. Materials:

1. Flexible Reinforcing Membrane: Manufacturer's resinous membrane for substrate-crack preparation and reflective-crack reduction. Membrane shall be installed cont. at all locations where Terrazzo Flooring is installed. "Basis-of-Design" for Crack Isolation Membrane is "Iso-Crack Epoxy Membrane by Terroxy Resin Systems", thickness per manufacturer recommendations and flexible epoxy membrane in white or gray, Contractors option on color. Install per manufacturer's recommendations. Owner shows the Membrane directly under the Terrazzo Flooring at all conditions. This membrane will also roll up the walls 6" high behind the 6" high coved Terrazzo Base.


2. Waterproofing Membrane: Manufacturer's resinous membrane for a continuous waterproofing membrane below the Crack Isolation Membrane for a complete waterproof seal above the Epoxy Sand Fill. This material will be rolled down into the area drains to provide a path for any water to be removed from that level. Membrane shall be installed cont. at all locations where Terrazzo Flooring is installed including rolled up behind the 6" Terrazzo Base along all walls. "Basis-of-Design" for the Waterproofing Membrane is the same "Iso-Crack Epoxy Membrane by Terroxy Resin Systems as installed above. Material will be the first coat of this system. Provide a 30 mil thickness of this material, a 100 percent solid and flexible epoxy membrane in white or gray, Contractors option on color. Install per manufacturer's recommendations.

3. Primer: Manufacturer's product recommended for substrate and use indicated. "Basis of Design" for this Project is Terroxy Primer by Terroxy Resin Systems, Part A & B.

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

   a. Physical Properties without Aggregates:

   1) Hardness: 60 to 85 per ASTM D 2240, Shore D.
   2) Minimum Tensile Strength: 3000 psi per ASTM D 638 for a 2-inch specimen made using a "C" die per ASTM D 412.
   3) Minimum Compressive Strength: 10,000 psi per ASTM D 695, Specimen B cylinder.
   4) Chemical Resistance: No deleterious effects by contaminants listed below after seven-day immersion at room temperature per ASTM D1308.

      a) Distilled water.
      b) Mineral water.
      c) Isopropanol.
      d) Ethanol.
      e) 0.025 percent detergent solution.
      f) 10 percent sodium hydroxide.
g) 10 percent hydrochloric acid.

h) 30 percent sulfuric acid.

i) 5 percent acetic acid.

b. Physical Properties with Glass Chips, Mirror Chips, Marble Chips and Aggregates: For resin blended with Georgia white marble, ground, grouted, and cured per requirements in NTMA's "Terrazzo Specifications and Design Guide"; comply with the following:

1) Flammability: Self-extinguishing, maximum extent of burning 0.25 inch per ASTM D 635.

2) Thermal Coefficient of Linear Expansion: 0.0025 inch/inch per deg. F for temperature range of minus 12 to plus 140 deg. F per ASTM D 696.

c. Bond Strength of Epoxy Terrazzo: 300 lb. failure according to field test method for surface soundness and adhesion as described in ACI Committee No. 403 Bulletin.

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

a. Abrasion and Impact Resistance: Less than 40 percent loss per ASTM C 131.

b. 24-Hour Absorption Rate: Less than 0.75 percent.

c. Dust Content: Less than 1.0 percent by weight.


7. Fiberglass Scrim: Scrim is required under all of the new Terrazzo areas. Material shall be as recommended in writing by the Contractor responsible for the entire Terrazzo system.

8. Sealant: provide Sealant as recommended by the Terrazzo Contractor in writing. The "Basis of Design" used for this Project is Sika, Sikaflex-1a a one part polyurethane elastomeric sealant adhesive.

9. Epoxy Floor Fill: Fill material shall be installed above the existing Concrete Slab over Metal Deck Slab. Material and methods shall be as recommended in writing by the Terrazzo Contractor responsible for the complete installation. The "Basis of Design" used for the new Terrazzo Substrate is a Terroxy Resin Systems – Terroxy Fill. Install Terroxy Primer over the complete existing concrete slab area, install an Epoxy Sand mix up to the appropriate level and Slopes in the field. The material is an Iron Silicate Copper Slag which is Black and mixed thoroughly at the rate of five hundred pounds (500 lbs). of Slag to eight (8) gallons of Epoxy Resin. Confirm that ratio with the Product Data Sheets provided by Terroxy and their representatives for this application. The Iron Silicate material is by Kleen Industrial Services, the product is HK402 Kleen Blast Abrasives – (16-30).
C. Terrazzo: Comply with NTMA's "Terrazzo Specifications and Design Guide" and manufacturer's written instructions for matrix and glass-chip, marble chip, aggregate proportions and mixing.

D. Custom Mix Color and Pattern: As Scheduled in Construction Documents. Refer to current Finish Schedule Sheet A1.400 for all Terrazzo Selection Marks and Descriptions.

2.2 STRIP MATERIALS

A. Thin-Set Divider Strips: L-type angle equal to depth of terrazzo.
   2. Top Width 1/8 inch or 1/4 inch as indicated on the Finish Schedule and Details.

B. Heavy-Top Divider Strips: L-type angle in depth required for topping thickness indicated.
   1. Bottom-Section Material: Matching top-section material.
   2. Top-Section Material: White-zinc alloy
   3. Top-Section Width: 1/8 inch back-to-back at all joints and changes of color. (U.O.N.)
   4. Top-Section Width: 1/4 inch at edges of Terrazzo. (U.O.N.)
   5. Top-Section Width: 3/8 inch at all locations where Terrazzo Strip is set along another metal element, such as Elevator Sills, Moving Walkway Pit Access Covers, Trench Drain Frames.

C. Control-Joint Strips: Double L-type angles with 1/8 inch exposed thickness, positioned back to back in a depth required for topping thickness indicated. No sealant shall be installed between these joints.

D. 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:
   1. Base-bead strips for exposed top edge of terrazzo base.
   2. Edge-bead strips for exposed edges of terrazzo.

E. Roll up Terrazzo Base Trim: Provide a 3/8 inch thick satin finished zinc trim cont. on top of the 6" high coved Terrazzo Base along the walls. The top of the Zinc trim will be set at 6" A.F.F. The selected wall tile will come down on top of the trim with a std. grout joint. Coordinate the exact layout of this material with the Tile Contractor.
2.3 MISCELLANEOUS ACCESSORIES

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

B. Patching and Fill Material: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.

C. Joint Compound: Terrazzo manufacturer's resinous product approved and recommended by manufacturer for application indicated.

D. Crack Suppression / Isolation Membrane: As recommended, produced and supplied by approved terrazzo resin formulator, having minimum 120 percent elongation potential per ASTM D412.

E. 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.

F. Sealer: Spartan Terra Glaze Acrylic Polymer Terrazzo Seal – 5810, non-ambering, clear sealer that is chemically neutral. Sealer does not impair terrazzo aesthetics or physical properties and is recommended by terrazzo matrix manufacturer. Four coats of sealer shall be applied. Sealer shall comply with the following:
   1. Surface Friction: Not less than 0.6 according to ASTM D2047.
   2. Acid-Base Properties: With pH factor between 7 and 10.
   3. Comply with requirements of authorities having jurisdiction.
   4. Solvent Based Sealer Properties: Flashpoint at 80 deg. F. or above according to ASTM D56.

PART 3 - EXECUTION

3.1 EXAMINATION

A. The Contractor, Owner's Representative and the Owner shall examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

   1. Slab Flatness Tolerance: Subfloor is not to vary more than 1/8 inch from true plane in a 10 foot span. Straight edge slab flatness to be witnessed by Owner.
   2. Cracks: Locate cracks and joints in concrete substrates. Verify location of control joints and expansion joints in epoxy terrazzo flooring. To prevent cracks in concrete substrates transmitting through epoxy terrazzo flooring, the Contractor shall install a crack suppression membrane.
B. The Contractor shall retain the services of an independent testing laboratory to verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to epoxy resin manufacture's written instructions.

1. Perform relative humidity test using in situ probes ASTM F2170. Proceed with installation only after substrates have a maximum 75 percent relative humidity level measurement.
2. Perform anhydrous calcium chloride test, ASTM F1869. Proceed with application of resinous flooring only after substrates have maximum moisture-vapor-emission rate of 3 lbs. of water / 1000 sq. ft. of slab area in 24 hours.

C. Alkalinity and Adhesion Testing: The Contractor shall retain the services of an independent testing laboratory to verify that concrete substrates have "ph" levels within acceptable range. Perform tests recommended by manufacturer. Proceed with application only after substrates pass testing.

D. The Contractor shall be responsible for correcting non-conforming concrete substrates using materials compatible with epoxy terrazzo flooring system.

1. Materials used to correct non-conforming conditions must be compatible with the selected epoxy system and be approved by the manufacturer of epoxy resin materials.

E. The Contractor shall proceed with installation only after unsatisfactory conditions, including levelness tolerances, cracking, excessive moisture vapor transmission and alkalinity have been corrected.

3.2 PREPARATION

A. Clean substrates of substances, including oil, grease, and curing compounds, that might impair terrazzo bond. Provide clean, dry, and neutral substrate for terrazzo application. Remove any loose chips and all foreign matter.

B. Concrete Slabs:

1. Provide sound concrete surfaces free of laitance, glaze, efflorescence, curing compounds, form-release agents, dust, dirt, grease, oil, and other contaminants incompatible with terrazzo. Note: that all of the Concrete Floor Slabs on this Project are existing Concrete over Metal Deck Slabs. Therefore most of the requirements stated below do not apply to requirements of this Project.

   a. 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. Surface preparation results should achieve a CSP3-CSP5 profile.

   b. Concrete floor shall receive a steel trowel finish.
c. Concrete shall be cured a minimum of 28 days. No curing agents are to be used in areas to receive terrazzo.
d. Concrete slab shall have an efficient moisture vapor barrier directly under the concrete slab.
e. Repair damaged and deteriorated concrete according to terrazzo manufacturer's written recommendations.
f. Use patching and fill material to fill holes and depressions in substrates according to terrazzo manufacturer's written instructions.
g. Contractor shall provide moisture mitigation materials according to instructions and recommendations of the moisture mitigation materials manufacturer. Cost for moisture mitigation materials and installation shall be included as a Unit Cost.
h. Contractor shall provide flexible epoxy crack isolation / suppression membrane. Cost for materials and installation over not more than five percent of the floor area receiving epoxy terrazzo shall be included in the Base Bid.

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

D. Protect other work from water and dust generated by grinding operations. Control water and dust to comply with environmental protection regulations.

1. 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, finishing, cleaning and the sealing process.

3.3 POURED-IN-PLACE EPOXY-RESIN TERRAZZO INSTALLATION

A. Comply with NTMA's written recommendations for terrazzo and accessory installation.

B. Place Epoxy Sand Floor Fill: at the appropriate thickness and slopes to provide the new Substrate for the Epoxy Flooring Material. Install as stated in section "2.1.B8 above. Existing Structural base concrete slab shall be shot blasted to create an approved surface by the installer before the Primer and Epoxy Sand Fill material can be installed.

C. Place, rough grind, grout, cure grout, fine grind, and finish terrazzo according to manufacturer's written instructions and NTMA's "Terrazzo Specifications and Design Guide".

D. Slab Flatness Tolerance: Subfloor is not to vary more than 1/8 inch from true plane in a 10 foot span. Straight edge slab flatness to be witnessed by Owner.

E. Ensure that matrix components and fluids from grinding operations do not stain terrazzo by reacting with divider and control-joint strips.
F. Delay fine grinding until heavy trade work is complete and construction traffic through area is restricted.

G. Waterproofing Membrane & Flexible Crack Isolation Reinforcing Membrane:
   1. Prepare and prefilt substrate cracks with membrane material.
   2. Install membranes to produce full substrate coverage in areas to receive terrazzo.
   3. Waterproofing Membrane shall be installed cont. over primed Epoxy Sand Fill material.
   4. Reinforce Crack Isolation Membrane with fiberglass scrim, this will be the second coat of Epoxy over the Waterproofing Membrane.
   5. Prepare membrane according to manufacturer's written instructions before applying substrate primer.

H. Primer: Apply cont. to top of Bed blasted existing Concrete Structural Slab. Apply cont. to top of Epoxy-Sand Fill Underbed before installing waterproofing membrane according to manufacturer's written instructions.

I. Strip Materials: Contractor shall install strip materials as follows:
   1. Divider and Control-Joint Strips:
      a. Locate divider strips in locations indicated.
      b. Install control-joint strips back to back in locations indicated.
      c. Install strips in epoxy adhesive setting bed without voids below strips.
   2. Accessory Strips: Install as required to provide a complete installation.

J. Placing Terrazzo:
   1. Prime subfloor in accordance with manufacturer's recommendations.
   2. Proportion and thoroughly blend the materials.
   3. Place mixture to achieve specified thickness.

K. Poured in Place Terrazzo Base: Contractor shall provide mix color for terrazzo base to match approved sample and mockup.
   1. Contractor shall place and finish terrazzo base at the same time the terrazzo floor is being installed. Refer to the Details and Elevations shown on the drawings that indicate a continuous coved base design. The Base will be 6 inch high with a 3/4 inch cove.

L. Finishing: Contractor shall finish the terrazzo topping as follows:
   1. Rough Grinding:
      a. Grind with 24 or finer grit stones or with comparable diamond abrasives.
b. Follow initial grind with 60 / 80 grit stones or with comparable diamond abrasives.

2. Grouting:
   a. Clean terrazzo with clean water and rinse. Allow to dry.
   b. Apply epoxy grout per manufacturer's instructions.
   c. Allow Grout to cure.

M. Fine Grinding / Polishing: Grind with 120 grit or with comparable diamond abrasives until all grout is removed from surface.

N. Terrazzo Cleaning: Contractor shall clean finished terrazzo as follows:
   1. Remove grinding residue from terrazzo surface.
   2. Wash terrazzo surfaces immediately after final grinding of terrazzo flooring with water and allow surfaces to dry thoroughly.

O. Sealing: Contractor shall seal terrazzo according to sealer manufacturer's written instructions. The Sealer shall be Spartan Terra Glaze Acrylic Polymer Terrazzo Seal – 5810 as specified in previous line items of this Section. Seal surfaces according to NTMA's written recommendations.

3.4 APPLICATION OF SEALER

A. Seal surfaces using four (4) coats of specified proprietary acrylic polymer sealer in strict accordance with manufacturer's written installation instructions and applicable recommendations of the NTMA, before turning over area to Owner.

B. The Contractor shall thirty six (36) hours prior to the scheduled opening of each Phase and Upon Owner's acceptance of the floor, turn over the area to allow Owner's custodial staff to clean and apply additional sealers/finishes as necessary and burnish flooring (machine buff) to achieve sealer and acceptable surface finish/sheen before each Phase is re-opened to public traffic. This applies to all of the Poured-in-Place Terrazzo installations.

3.5 REPAIR

A. Cut out and replace terrazzo areas that show evidence of 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 Owner.
3.6 CLEANING AND PROTECTION

A. Cleaning:

1. 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. At this time the work shall be ready for final inspection and acceptance by the Owner or his agent.

B. 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.

3.7 SCHEDULE OF MIXES

A. The final Material Matrix will be provided with the Submitted Samples that will match the Owners approved Samples.

1. TR-1: Dark Blue; Material Matrix:
   a. #1 Clear Plate Glass 20%
   b. #2 Clear Plate Glass 20%
   c. #2 Mirror Chips (GB Thin 1 sided mirror) 25%
   d. #1 Mother of Pearl 35%

2. TR-2: Mid Grey; Owners Control Sample #9860-1, Material Matrix:
   a. #1 Clear Plate Glass 15%
   b. #2 Mirror Chips (GB Thin 1 sided mirror) 15%
   c. #1 Mother of Pearl 20%
   d. “B” Mix Blanco Mexicano 50%

3. TR-3: White; Material Matrix:
   a. White Marble Size #1 25%
   b. White Marble Size #2 25%
   c. Smoke Gray Glass Size #2 25%
   d. Mirror Glass Size #2 25%

4. TF-01 Light Blue Aggregates:
   a. #1 Clear Plate Glass 15%
   b. #2 Mirror Chips (GB Thin 1 sided mirror) 15%
   c. #1 Mother of Pearl 20%
   d. “B” Mix Blanco Mexicano 50%

5. TF-02 Classic Burgundy Aggregates:
a. #2 Clear Plate Glass 25%
b. #1 Mirror Chips (GB Thin 1 sided mirror) 25%
c. #1 Mother of Pearl 30%
d. #3 Mother of Pearl 20%

6. TF-03 Light Grey Aggregates:

a. #1 Clear Plate Glass 15%
b. #2 Mirror Chips (GB Thin 1 sided mirror) 15%
c. #1 Mother of Pearl 20%
d. “B” Mix Blanco Mexicano 50%

7. TF-04 Beige Aggregates:

a. #1 Clear Plate Glass 20%
b. #2 Clear Plate Glass 20%
c. #2 Mirror Chips (GB Thin 1 sided mirror) 25%
d. #1 Mother of Pearl 35%

8. TF-05 Dark Blue Aggregates:

a. #1 Clear Plate Glass 20%
b. #2 Clear Plate Glass 20%
c. #2 Mirror Chips (GB Thin 1 sided mirror) 25%
d. #2 Mother of Pearl 35%

END OF SECTION 096623