

SECTION 09445

TERRAZZO TILE

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Marble terrazzo tile and base, for installation on:
  - 1. Concrete floors.
  - 2. Wood floors.
  - 3. Existing flooring, as indicated on drawings.
  - 4. Walls.
  
- B. Granite tile and base, for installation on:
  - 1. Concrete floors.
  - 2. Wood floors.
  - 3. Existing flooring, as indicated on drawings.
  - 4. Walls.
  
- C. Quartz tile and base, for installation on:
  - 1. Concrete floors.
  - 2. Wood floors.
  - 3. Existing flooring, as indicated on drawings.
  - 4. Walls.

1.2 RELATED SECTIONS

- A. Document 00200 - Instructions to Bidders: Substitution procedures.
  
- B. Section 03300 - Cast-in-Place Concrete: Concrete substrates.
  
- C. Section 06100 - Rough Carpentry: Wood substrates.

1.3 REFERENCES

- A. ASTM C 109/C 109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).
  
- B. ASTM D 2047 - Standard Test Method for Static Coefficient of Polish-Coated Floor Surfaces as Measured by the James Machine.
  
- C. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
  
- D. ASTM E 648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.

E. MIL D-3134F - Deck Covering Materials.

#### 1.4 SYSTEM DESCRIPTION

##### A. Performance Requirements of Terrazzo Tiles:

1. Abrasive wear loss, in accordance with MIL F-52505, Taber abraser, CS-17 wheels, at 1000 cycles with 1000 gram load:
  - a. 5/8 inch (16 mm) chips: Maximum 0.0009 inch (0.0023 mm).
  - b. 1/4 inch (6 mm) chips: Maximum 0.0005 inch (0.013 mm).
2. Compressive strength, in accordance with ASTM C 109/C 109M: Between 2950 and 4000 psi (20 and 27 MPa).
3. Water absorption, in accordance with MIL D-3134F: 0.4 percent, maximum.
4. Hardness:
  - a. Matrix: Shore D 75-83.
  - b. Aggregate: Barcol 55-100.
5. Coefficient of friction, when tested in accordance with ASTM D 2047: Greater than 0.7, average 0.74.
6. Flame spread, in accordance with ASTM E 84: Class A.
7. Critical radiant flux, in accordance with ASTM E 648: 0.45 watt/cubic centimeter, Class 1.

#### 1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's product literature, including installation instructions, maintenance requirements, and sample warranty.
- C. Shop Drawings: Submit for special layout designs.
- D. Selection Samples: For color selection.
- E. Verification Samples: For verification of custom colors.
- F. Tile Manufacturer's Certification: That all materials comply with specified requirements and are acceptable to the manufacturer for this installation.
- G. Installer Qualifications: For approval.
- H. Maintenance Data: Manufacturer's printed cleaning and maintenance information.

#### 1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
  - 1. Regularly and presently manufacturer of terrazzo tile meeting the requirements of the Contract Documents.
  - 2. Manufacturer of terrazzo tile which has been in satisfactory and efficient operation on three installations similar or equivalent to this project for a minimum of three years; submit a list, with locations and phone contacts.
  - 3. Approved by Architect.
  
- B. Installer Qualifications:
  - 1. Having the technical qualifications, experience, trained personnel and facilities required.
  - 2. Minimum of three successful installations of the same manufacturer's tile within the last three years.
  - 3. Approved by the Architect.

#### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to jobsite in original unopened containers, free of damage, with manufacturer's identification and brand name clearly marked.
  
- B. Store materials in a protected area, kept dry.
  
- C. Store on pallets complying with manufacturer's requirements, at not less than 40 degrees F (4 degrees C) nor more than 100 degrees F (38 degrees C).

#### 1.8 ENVIRONMENTAL REQUIREMENTS

- A. Do not begin work until temperature at the site is at least 70 degrees F (21 degrees C), has been maintained at that temperature for at least 48 hours, and will continue to be maintained using permanent heating systems.
  
- B. Store materials on site at 70 degrees F (21 degrees C) for at least 48 hours prior to installation, separating tile boxes from pallets so as to allow tile to fully acclimate to ambient temperature.

#### 1.9 WARRANTY

- A. Provide manufacturer's standard warranty.

#### 1.10 MAINTENANCE MATERIALS

- A. Provide the following quantities of maintenance materials:

1. Fritz "FCP-102 Sealer": \_\_\_\_\_
2. Fritz "FCP-300 Dura-Gloss Polish": \_\_\_\_\_
3. Fritz "FCP-400 Floor Stripper": \_\_\_\_\_
4. Fritz "FCP-500 Cleaner": \_\_\_\_\_

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Provide Fritztile manufactured by Fritz Industries, Inc., 500 Sam Houston Road, Dallas, TX 75149. ASD  
Tel: (800) 955-1323. Fax: (972) 270-0179.
- B. Substitutions: Not permitted.
- C. Substitutions will be considered prior to bid date only; comply with procedures specified elsewhere. See requirements for manufacturer qualifications.
- D. Substitutions will be considered after bid date; comply with procedures specified elsewhere. See requirements for manufacturer qualifications.

### 2.2 MATERIALS

- A. Marble Terrazzo Tile:
  1. Product: "Fritztile Marble Series CL-200 Classic Terrazzo"; 1/8 inch (3.2 mm) nominal thickness.
  2. Product: "Fritztile Marble Mosaic Series CL-600"; 3/16 inch (4.8 mm) nominal thickness.
  3. Product: "Fritztile Marble Series T-900 Traditional Terrazzo Tile"; 1/8 inch (3.2 mm) nominal thickness.
  4. Product: "Fritztile Marble Series CLN-1000 Grani-Flex"; 1/8 inch (3.2 mm) nominal thickness.
  5. Composition: Marble chips embedded in flexible thermosetting resin matrix.
  6. Tile face size: Nominal, 12 inches (305 mm) square; actual, 11.92 inches (302.4 mm) square.
  7. Colors: As selected by Architect from manufacturer's standard selection.
  8. Colors: Custom colors as selected by Architect.
  9. Colors: As indicated on schedule.
  10. Colors: \_\_\_\_\_.
- B. Granite Tile:
  1. Product: "Fritztile Granite Series GT-3000 Granite Tile"; 1/8 inch (3.2 mm) nominal thickness.
  2. Product: "Fritztile Granite Series GS-5000 Granite Supreme"; 3/16 inch (4.8 mm) nominal thickness.

3. Product: "Fritztile Granite Series GD-7000 Granite Deluxe"; 1/4 inch (6.3 mm) nominal thickness.
  4. Composition: Granite chips embedded in flexible thermosetting resin matrix.
  5. Tile face size: Nominal, 12 inches (305 mm) square; actual, 11.92 inches (302.4 mm) square.
  6. Colors: As selected by Architect from manufacturer's standard selection.
  7. Colors: Custom colors as selected by Architect.
  8. Colors: As indicated on schedule.
  9. Colors: \_\_\_\_\_.
- C. Quartz Tile:
1. Product: "Fritztile Quartz Series QT-1500 Quartz Tile"; 3/16 inch (4.8 mm) nominal thickness.
  2. Composition: Quartz chips embedded in flexible thermosetting resin matrix.
  3. Tile face size: Nominal, 12 inches (305 mm) square; actual, 11.92 inches (302.4 mm) square.
  4. Colors: As selected by Architect from manufacturer's standard selection.
  5. Colors: Custom colors as selected by Architect.
  6. Colors: As indicated on schedule.
  7. Colors: \_\_\_\_\_.
- D. Terrazzo Tile Base: "Set-on" straight base to match floor tile.
1. Base dimensions: Nominal 4 inches (101 mm) by 12 inches (305 mm), with polished radius top.
  2. Base dimensions: Nominal 6 inches (152 mm) by 12 inches (305 mm), with polished radius top.
- E. Tile Factory Finish: Permanent finish designed to accept topical protective coatings of the acrylic dressing type.
- F. Patching Compounds:
1. Composition: Cementitious compound of factory-blended materials; one or more of the following for indicated project conditions:
    - a. For concrete floors: Fritz "Poz Patch 1", "Poz Patch 2", or "F-10 Selfleveling".
    - b. For wood floors: Fritz "Poz Patch 2".
    - c. For existing resilient floors: Fritz "F-77" embossing leveler.
    - d. Existing terrazzo floors: Fritz "Poz Patch 1", "Poz Patch 2", or "Poz Patch 3".
  2. Gypsum-based patching compounds not permitted.
- G. Adhesives:

1. Epoxy adhesive: Fritz "S-222 Epoxy Tile Adhesive"; use for following applications:
    - a. Areas where tile will get wet (except for cleaning).
    - b. Areas subject to prolonged temperatures below freezing.
    - c. Chemical processing areas.
    - d. Areas below grade.
    - e. Other areas indicated.
  2. Soft cure adhesive: Fritz "FA-121 Pressure Sensitive Floor Tile Adhesive"; use for following applications:
    - a. Existing resilient floors.
    - b. Existing terrazzo.
    - c. Other areas indicated that are not subject to moisture.
    - d. Do not use below grade.
  3. For granite tile: Fritz "FA-121 Pressure Sensitive Floor Tile Adhesive" or "S-222 Epoxy Tile Adhesive".
- H. Sealant: Clear water-resistant silicone sealant.
- I. Sealer: Fritz "FCP-102 Sealer".
- J. Finish Coating: "FCP-300 Duro-Gloss".
- K. Underlayment: APA underlayment grade plywood, or underlayment grade oriented-strand-board.
- L. Underlayment: Cementitious tile backer units.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Do not begin installation over concrete substrates until acceptable moisture conditions have been met; perform test for moisture emission as specified.
- B. Verify that required flatness tolerances have been met.
- C. Do not proceed until unacceptable conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare substrates in accordance with tile manufacturer's instructions and recommendations.
- B. Moisture Emission Test for Concrete: Do not install terrazzo tile on concrete which has moisture emission

greater than 3.0 pounds per 1000 square feet (0.015 kg/sq m) per 24 hours.

1. Before beginning test, shot-blast, scarify, or sand a small portion of the surface where test will be conducted.
2. Use an anhydrous calcium chloride 72 hour test unit and weigh within one hour of completion of test.

C. New Concrete:

1. Remove curing compounds, grease, dirt, loose particles, projections, and other foreign matter that would prevent adhesion.
2. Fill joints, depressions, and irregularities with specified patching compound.

D. Existing Concrete:

1. Remove adhesives, mastics, and sealers completely and thoroughly. Use shot blasting, grinding, sanding, or chemical remover as required.
2. Clean off residues, grease, dirt, loose particles, projections, and all other foreign matter that would prevent adhesion.
3. Fill joints, depressions, and irregularities with specified patching compound.

E. Wood Substrates:

1. Cover with new underlayment; stagger joints to offset corners; fasten with screws at spacing recommended by manufacturer.
2. Fill joints and depressions with specified patching compound.

F. Existing Terrazzo:

1. Remove wax and sealers; rinse clean with clear water.
2. Remove or seal existing metal dividers.
3. Fill cracks and depressions with specified patching compound.

G. Existing Resilient Floors:

1. Remove wax and polish; rinse clean with clear water.
2. Do not sand.
3. Fill depressions, embossing and cracks with specified patching compound.

H. Cementitious Backer Units:

1. Fill joints and depressions with specified patching compound.

### 3.3 INSTALLATION

- A. Install in accordance with tile manufacturer's instructions.
- B. Lay design symmetrically off center lines of rooms.
- C. Make joints tight, inconspicuous, and in true alignment.
- D. Cut tile to fit snugly at fixed vertical projections.
- E. Apply adhesive to substrate, set tile, and remove spots and smears of adhesive immediately.
- F. Roll tile into adhesive with 150 pound (68 kg) roller in direction diagonal to tile alignment until adhesive has set and entire installation is flat and smooth.
- G. Examine installation for excess adhesive, high tile edges, tile bond, and curling. Repair or replace areas that are defective.
- H. Seal entire floor area with 2 coats of specified sealer using a rayon string mop or other non-linting applicator, applied as soon as possible after adhesive has cured.
- I. Seal edges of tile at floor perimeter with clear sealant.

#### 3.4 PROTECTION

- A. Keep all traffic off new floor installations for at least 24 hours after completion of installation.
- B. Install protective covering and maintain until project completion; do not apply masking tape directly to tile. Remove covering at completion.

#### 3.5 CLEANING PRIOR TO OCCUPANCY

- A. Do not strip finish with strong stripping solutions; damage to factory finish will occur.
- B. Do not flood floor with water: Water-based adhesives can be impaired.
- C. Finish with two coats of specified finish coating.

END OF SECTION