

NORTHWESTERN UNIVERSITY
PROJECT NAME _____
JOB # _____

FOR: _____
ISSUED: 03/29/2017

SECTION

3. Expansion-joint strips.
 4. Accessory strips.
 5. Abrasive strips.
 6. Stair treads, risers, and landings.
 7. Precast terrazzo jointing and edge configurations.
 8. Terrazzo patterns.
- D. Samples: For each exposed product and for each color and texture specified, 6 inches (150 mm) in size.
- E. Samples for Initial Selection: NTMA color plates showing the full range of colors and patterns available for each terrazzo type.
- 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: 12-inch- (150-mm-) square Samples for each type finish and color combination selected.
 - a. A maximum of four (4) separate submittals maybe required to obtain the desired aggregate proportions and color.
 - b. Provide samples finished as specified, numbered on the back side for reference with a description of the aggregate colors and proportions.
 2. Precast Terrazzo: 6-inch- (150-mm-) square Samples.
 3. Accessories: 6-inch- (150-mm-) long Samples of each exposed strip item required.
 - a. Color selection samples for abrasive warning strips.
- G. Prior to start of terrazzo work, construct a sample mock-up of the proposed installation where directed by the Architect to be left in place after the Architect's review as guide until terrazzo work is complete. The mock-up sample will be reviewed by the Architect and Owner for acceptance of color, finish, and workmanship.
- 1.5 INFORMATIONAL SUBMITTALS
- A. Qualification Data: For Installer.
 - B. Material Certificates: For each type of terrazzo material or product, from manufacturer.
- 1.6 CLOSEOUT SUBMITTALS
- A. Maintenance Data: For terrazzo to include in maintenance manuals.
- 1.7 QUALITY ASSURANCE
- A. Comply with the most current edition of the Northwestern University Design Standards.
 - B. Installer Qualifications: An installer who is a contractor member of NTMA.

- C. 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.

1.8 DELIVERY, STORAGE, AND HANDLING

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

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Maintain temperature above 50 deg F (10 deg C) for 48 hours before and during terrazzo installation.
- B. Weather Limitations: Proceed with rustic terrazzo installation only when forecasted weather conditions permit work to be performed according to NTMA's written recommendations and temperatures remain above 45 deg F (7.2 deg C).
- C. Field Measurements: Verify actual dimensions of construction contiguous with precast terrazzo by field measurements before fabrication.
- D. Provide permanent lighting or, if permanent lighting is not in place, simulate permanent lighting conditions during terrazzo installation.
- E. Close spaces to traffic during terrazzo application and for not less than 24 hours after application unless manufacturer recommends a longer period.
- F. Control and collect water and dust produced by grinding operations. Protect adjacent construction from detrimental effects of grinding operations.
- G. Pre-Installation Conference: Conduct conference at the Project Site. Review methods and procedures related to installation including, but not limited to, the following:
 - 1. Inspect and discuss conditions of substrate and other preparatory work performed by other trades.
 - 2. Review structural loading limitations.
 - 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 4. Review dust-control procedures.

PART 2 - PRODUCTS

- B. FloorScore Compliance: Terrazzo floors shall comply with requirements of FloorScore Standard.

2.2 PORTLAND CEMENT TERRAZZO

- A. Portland Cement Terrazzo System: Monolithic.

- 1. Topping: Comply with NTMA's "Terrazzo Specifications and Design Guide" for terrazzo system indicated for matrix and aggregate proportions and mixing.
 - a. Terrazzo Topping Thickness: **[As indicated]** <Insert dimension>.
 - b. Formulated Mix Color and Pattern: **[As selected by Architect from NTMA standard-terrazzo plates]** **[As selected by Architect from NTMA Venetian-terrazzo plates]** <Insert NTMA color plate designation>.
 - c. Custom Mix Color and Pattern: **[Match Architect's sample]** **[Match existing]** <Insert custom design-mix attributes>.

- B. Materials:

- 1. Portland Cement: ASTM C 150, Type 1.
 - a. Color for Exposed Matrix: As required by mix indicated.
- 2. Water: Potable.
- 3. 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 and ASTM C 535.
 - b. 24-Hour Absorption Rate: Less than 0.75 percent.
 - c. Dust Content: Less than 1.0 percent by weight.
- 4. Matrix Pigments: Pure mineral or synthetic pigments, alkali resistant, durable under exposure to sunlight, and compatible with terrazzo matrix.
- 5. Bonding Agent: Neat portland cement, or epoxy or acrylic bonding agents formulated for use with topping indicated.

2.3 PRECAST TERRAZZO

- A. Manufacturers: Subject to compliance with requirements, -12.3(.002)0.5(t)D5A12.3(m)-33(e)-1d8(s)-8(

3. Outside Corner Units: With finished returned edges at outside corner.
4. Color, Pattern, and Finish: Match adjacent poured-in-place terrazzo flooring.

C. Precast Terrazzo Units: Minimum 3/4-inch- (19-mm-) thick, reinforced, portland cement terrazzo units. Comply with NTMA's written recommendations for fabricating precast terrazzo 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 (3.2-mm) radius.

1. Tiles.
2. Planks.
3. Stair treads and landings.
4. Thresholds.
5. Sills.
6. Color, Pattern, and Finish: **<Insert requirements>**.

2.4 STRIP MATERIALS

- A. Standard Divider Strips: One-piece, flat-

1. Strips: Provide mechanical anchoring devices or adhesives for strip materials as recommended by manufacturer and as required for secure attachment to substrate.
 2. Precast Terrazzo: Provide mechanical anchoring devices as recommended by fabricator for proper anchorage and support of units for conditions of installation and support.
- C. Isolation and Expansion-Joint Material: Closed-cell polyethylene foam, nonabsorbent to liquid water and gas, and non-outgassing in unruptured state; butyl rubber; rubber; or cork; minimum 1/2 inch (12.7 mm) wide.
- D. Portland Cement Terrazzo Cleaner: Chemically neutral cleaner with pH factor between 7 and 10 that is biodegradable, phosphate free, and recommended by cleaner manufacturer for use on terrazzo type indicated.
- E. Sealer: Slip- and stain-resistant, penetrating-type sealer that is chemically neutral; does not affect terrazzo color or physical properties; is recommended by sealer manufacturer; and complies with NTMA's "Terrazzo Specifications and Design Guide" for terrazzo type indicated.
1. Surface Friction: Not less than 0.6 according to ASTM D 2047.
 2. Acid-Base Properties: With pH factor between 7 and 10.
 3. Sealers shall have a VOC content of 200 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions, including levelness tolerances, have been corrected.

3.2 PREPARATION

- A. Clean substrates of substances, including oil, g()Tj EMC /H3 <<7-8(c)-8(-12.3(t).7(g()Tj4.9(3.2(s)-N))TJ 0 T

