SECTION 093000

TILE SETTING MATERIALS AND ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tile Setting Mortar and Adhesive.

B. Grout.

C. Electric Radiant Floor Warming.

D. Flooring Underlayment.

E. Waterproofing.

F. Thresholds, Trim and Accessories.

1.2 REFERENCES

A. ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile; 1999.

B. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile; 1999.

C. ASTM C 109/C 109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or (50-mm) Cube Specimens); 1999.

D. ASTM C 241 - Standard Test Method for Abrasion Resistance of Stone Subjected to Foot Traffic; 1990 (Reapproved 1997).

E. ASTM C 503 - Standard Specification for Marble Dimension Stone (Exterior); 1999.

F. ASTM C 627 - Standard Test Method for Evaluating Ceramic Floor Tile Installation Systems Using the Robinson-Type Floor Tester; 1993.

G. ASTM C 905 - Standard Test Methods for Apparent Density of Chemical-Resistant Mortars, Grouts and Monolithic Surfacings; 1996.

H. ASTM C 1353 - Standard Test Method Using the Taber Abrader for Abrasion Resistance of Dimension Stone Subjected to Foot Traffic; 1998.

I. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing; 1997.

J. ASTM D 751 - Standard Test Methods for Coated Fabrics; 1998.

K. ASTM D 2240 - Standard Test Method for Rubber Property--Durometer Hardness; 1997.

L. ASTM D 4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications; 2000.

M. ASTM E 90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 1999.

N. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials; 1995.

O. ASTM E 413 - Classification for Rating Sound Insulation; 1987 (Reapproved 1999).

P. ASTM E 492 - Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine; 1990 (Reapproved 1996).

Q. FS TT-C-555 - Coating, Textured (For Interior and Exterior Masonry Surfaces); cancelled 2001.

R. TCA (HB) - Handbook for Ceramic Tile Installation; Tile Council of America; 2001.

1.3 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's technical information for each product specified.

C. Sound Control Underlayment Test Reports: Demonstrate compliance with specified acoustical performance criteria; furnish reports of tests conducted by independent testing agency.

D. Selection Samples: Color charts for selection of grout.

E. Verification Samples: Actual samples of mortars, grouts and adhesives, tested for compatibility in relationships to be found in project installation.

F. Installation Instructions: Manufacturer's printed instructions for each product.

G. Maintenance Instructions: Include cleaning and stain removal methods and cleaning solutions recommended.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Firm specializing in manufacture of tile installation materials, including mortars, grouts, and adhesives, with minimum 10 years experience and ISO 9001 certification.

B. Laboratory Testing: For each mortar, grout, and adhesive specified, submit laboratory confirmation using positive analytical methods of:
   1. Compatibility of materials to be used together.
   2. Proper usage of specified materials.
   3. Color matching.

C. Installer Qualifications: Firm specializing in installation of ceramic and/or stone tile, with minimum 5 years documented experience with projects of similar scope, design, and materials.

D.

E. Pre-Installation Meeting: At least three weeks prior to commencing tile work conduct a meeting at the project site to discuss contract requirements and job conditions; require the attendance of tile installers, representative of installation materials manufacturer, and installers of related materials; notify Architect in advance of meeting.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage or contamination to materials by water, freezing, foreign matter or other causes.

B. Store materials subject to damage by freezing or overheating, including latex, organic, and epoxy materials, at room temperature if possible.

C. Deliver and store materials on site at least 24 hours before work begins.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.

B. Vent temporary heaters to exterior to prevent damage to tile work from carbon dioxide build-up.

C. Maintain temperatures at not less than 50 degrees F (10 degrees C) and not more than 100 degrees F (38 degrees C) in tiled areas during installation and for 7 days after completion, unless other temperatures are required by referenced installation standards or manufacturer's written instructions.

D. Protect Portland cement based materials from direct sunlight, radiant heat, forced hot and cold ventilation and drafts until cured, to prevent premature evaporation of moisture. When installed at low temperatures allow for longer curing time and protect from damage until cured.

E. Do not install epoxy based materials when surface temperature is less than 60 degrees F (16 degrees C) or over 90 degrees F (32 degrees C).

1.7 WARRANTY

A. Provide manufacturer's standard written 10-year warranty, covering materials and labor for replacement of defective materials.

B. Provide Contractor's warranty that work will be free of defects in materials and workmanship for 10 years.

1.8 MAINTENANCE MATERIALS

A. Deliver to Owner minimum of 1 gallon (4 L) of each type of mortar, grout, and adhesive, for use in repair and maintenance; provide color matched materials from same production run or batch as installed materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: LATICRETE International, Inc.,

B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

C. Obtain products from a single manufacturer.

2.2 UNDERLAYMENT

A. Laticrete 816 LatiPatch: Rapid Cementitious patching compound for application over concrete or exterior grade plywood, cutback adhesive, vinyl tile, dry concrete or unglazed tile.
   1. Curing Time: Tile - Approximately 1 1/2 to 2 hours.
   2. Compressive Strength - 28 day cure, ANSI A118.4 F.6: 5000 psi (34.5 MPa).

2.3 LATEX MORTAR BED

A. Slurry Bond Coat:
   1. Laticrete 254 Platinum: High strength slurry bond coat that is frost, weather and shock resistant.
      a. Compressive Strength: 5,000 psi (34.5 MPa), min., in accordance with ANSI A118.4.
      b. Hardness: 50 to 60, min., in accordance with ÅSTM D 2240, D-scale for 72 hours.
      c. Bond Strength: 500 psi (3.5 MPa), min., in accordance with ANSI A118.4.
      d. Wet Density: 102 pcf (1637 kg/cu m) nominal, in accordance with ÅSTM C 905.
      e. Water Absorption: 4 percent, max., in accordance with ANSI A118.6.
      f. Surface Burning Characteristics: Flame spread and smoke developed indices of 0, in accordance with ÅSTM E 84,

modified.

g. Service Rating: Passing ÅSTM C 627 cycles 1-14 (TCA "Extra Heavy").

B. Mortar Bed:

1. Laticrete 226 Thick-Bed Mortar with Laticrete 3701 Mortar Admix: Latex portland cement mortar made of factory-blended cement and aggregates requiring only the addition of latex mortar additive; weather, frost, and shock resistant.
   a. Compressive Strength: 5,000 psi (34.5 MPa) min., in accordance with ANSI A118.4.
   b. Hardness: 70 to 80, in accordance with ASTM D 2240 D-scale for 72 hours.
   c. Wet Density: 135 pcf (2166 kg/cu m), nominal, in accordance with ÅSTM C 905.
   d. Water Absorption: 5 percent, maximum, in accordance with ANSI A118.6.
   e. Surface Burning Characteristics: Flame spread and smoke developed indices of 0 in accordance with ÅSTM E 84, modified.
2. Laticrete 209 Floor Mud: Pre-mixed, alternative to 226 Thick Bed Mortar. Mixes with 3701 Mortar Admix to provide a conventional floor mortar bed. For interior applications such as small shower pan fills in bathrooms. Covers 6 square feet (0.56 sm) at 1 inch (25mm) thickness per 60 lb (27.3kg) bag.

2.4 MULTIPURPOSE THIN-SET MORTAR

A. LATICRETE 254 R Platinum Rapid: One-step, polymer fortified, thin-set mortar for interior and exterior installation of ceramic tile, stone, quarry tile, pavers and brick.
   1. Shear Bond, Porcelain Tile, 28 day cure - ANSI A118.4-1999; F-5.2.4: 450-500 psi (3.1 - 3.8 MPa).
   2. Water Immersion, 7 Day Cure - ANSI A118.4-1999; F-5.2.3 225 - 275 psi (1.6 - 1.9 MPa).
   3. Color: Gray.
   4. Color: White.

2.5 EPOXY GROUT

A. Laticrete SpectraLOCK PRO Grout: High performance grout for use with ceramic, glass and stone tile for residential or commercial applications.
   1. Water cleanability: Up to 80 minutes.
   2. Initial set: 2 hours.
   3. Service strength: 24 hours.
   4. Shrinkage: 0.25 percent.
   5. Quarry/quarry bond strength: 1,000 psi (6.9 MPa) - Failure at tile.
   6. Compressive strength 3,500 psi (24 MPa) - 7 days.
   7. Tensile strength 1,100 psi (7.6 MPa) - 7 days.
   8. Thermal shock 510 psi (3.5 MPa).

9. Water absorption: Less than 0.50 percent.

2.6 EDGE PROTECTION AND TRANSITION PROFILES FOR FLOORS

A. Description: L-shaped extruded aluminum profile
1. Manufacturer: Schluter Systems or approved equal.
2. Profile and color to be selected by Architect from manufacturer's standard collection.

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine surfaces to receive tile work and conditions under which tile will be installed.

B. Do not proceed with tile work until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.

3.2 PREPARATION OF EXISTING FLOOR SURFACES

A. Remove existing floor coverings that are not sound, solid, well bonded, clean and free of dust, wax, grease, sealers, and other contaminants that may reduce or prevent adhesion.

B. Do not install tile over cushioned vinyl flooring.

3.3 GROUTING

A. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.

B. Clean sanding water, dust, and foreign substances from joints to be grouted.

C. Clean and dry tile surfaces.

D. After grouting, remove all grout residue promptly.

3.4 CLEANING

A. Clean excess mortar from surfaces with water as work progresses while mortar is fresh and before it hardens.

B. Remove grout haze promptly; do not use acids.

3.5 PROTECTION

A. Floors: Protect from all traffic for at least 72 hours after installation.
1. Do not step on floor for at least 24 hours; if traffic is unavoidable

after that, use plywood stepping boards.

2. Protect from heavy traffic for at least 7 days after installation.
3. When fast-setting materials are used to allow faster occupancy, comply with the manufacturer's recommendations.

B. Walls: Protect from impact, vibration and heavy hammering on adjacent and opposite walls for at least 14 days after installation, unless manufacturer's instructions allow a shorter period.

C. Protect from food products and chemicals which can cause staining for at least 14 days.

D. Protect from freezing and total water immersion for at least 21 days after installation.

END OF SECTION 093000