**Creative Materials Corporation**

SECTION 09 30 00

TILE AND STONE, SETTING MATERIALS, AND ACCESSORIES

**PART 1 GENERAL**

* 1. SECTION INCLUDES
1. Tile and Accessories
2. Setting Materials
3. Adhesives and Primers
4. Grout Materials
5. Waterproof Membrane
6. Crack Isolation Membrane
7. Flexible Sealant
	1. RELATED SECTIONs
8. Section 07920 - Sealing expansion joints and other joints in tile work
9. Section 09750 – Stone
10. Section 03300 – Concrete
	1. REFERENCES
11. ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile
12. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile
13. ASTM C 150 - Standard Specification for Portland Cement
14. ANSI A137.1 – American National Standard Specifications for Ceramic Tile
15. TCNA - (HB) - Handbook for Ceramic Tile Installation; Tile Council of North America.
16. ISO 13007 - International Standards Organization; classification for Grout and Adhesives.
	1. SUBMITTALS
17. Submit under provisions of Section 01 30 00 - Administrative Requirements.
18. [Product Data]: Manufacturer's technical information for each product specified.
19. Selection Samples: For each product specified, two complete sets of color charts representing manufacturer's full range of available colors and patterns.
20. Installation Instructions: Manufacturer's printed instructions for each product.
21. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
22. Maintenance Data: Included recommended cleaning methods, cleaning materials, and maintenance coatings.
	1. QUALITY ASSURANCE
23. Provide cleaners, sealing and maintenance products as well as tile grout, setting materials, additives, and factory-prepared dry-set mortars as required.
24. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of surface preparation materials, membranes, mortar, and grout from the same source.
25. Field Mock-Up: Recommended scaled to appropriate size of the scope of the work \_\_\_\_\_\_ sq ft (Insert) and will be reviewed for joint quality, color range, pattern and workmanship.
	1. DELIVERY, STORAGE, AND HANDLING
26. 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.
27. Do not use frozen materials unless specifically allowed by manufacturer.
28. Provide heated and dry storage facilities on site.
	1. PROJECT CONDITIONS
29. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
30. Vent temporary heaters to exterior to prevent damage to tilework from carbon dioxide build-up.
31. Maintain temperatures at not less than 50 deg F (10 deg C) in tiled areas during installation and for 7 days after completion, unless higher temperatures are required by referenced installation standards or manufacturer's written instructions.
	1. PRE-INSTALLATION CONFERENCE
32. Convene one week prior to commencing work of this section.
33. Required attendance of installation material manufacturer, tile supplier, tile installer and installers of related work. Review Installation procedures and coordination required with related work.
34. Meeting agenda includes but is not limited to:
	1. Tile and installation material compatibility.
	2. Grouting procedure.
	3. Maintenance and cleaning products and methods.
	4. Surface Preparation.
	5. PROJECT CONDITIONS
35. Do not begin installation until building is completely enclosed and maintaining temperature and humidity conditions consistent with “after occupancy” conditions for a minimum of 2 weeks.
36. Maintain ambient and substrate temperature of 50 degrees F (10 degrees C) during tiling and for a minimum of 7 days after completion.
37. Ventilate spaces receiving tile in accordance with material manufacturer’s instructions.
	1. EXTRA MATERIALS
38. Deliver attic stock for Owner's use in maintenance.
	1. Provide for Owner's use a minimum of 2 percent of the primary sizes and colors of tile specified, boxed and clearly labeled.

**PART 2 PRODUCTS**

2.1 MANUFACTURERS

1. Acceptable Manufacturer: Creative Materials Corporation. One Washington Square. Albany, NY 12205
2. Substitutions: Not permitted.

2.2 SETTING MATERIALS

1. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
2. Dry-Set Portland Cement Mortar: ANSI A118.1
3. Dry-Set Portland Cement Mortar for Large and Heavy Tile: ANSI A118.1
4. Modified Dry-Set Cement Mortar: ANSI A118.4
5. Modified Dry-Set Cement Mortar, Rapid-Setting Tile: ANSI A118.15, ANSI A118.4-A118.11
6. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11
7. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile, Rapid setting: ANSI A118.4-A118.11
8. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile: ANSI A118.15-A118.11
9. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid Setting ANSI A118.15-A118.11
10. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3
11. Organic Adhesive: ANSI A136.1 and ISO 13007

2.3 ADHESIVES AND PRIMERS

1. Primer: Multi-purpose latex
2. Multi-purpose bond promoting primer: Low-VOC, synthetic resin-based primer with bond-promoting silica aggregates suspended in a dispersion, for interior and exterior applications.
3. Wall Tile Adhesive: Non-flammable organic adhesive, complying with ANSI A136.1
4. Floor and Wall Tile Adhesive Non-flammable organic adhesive, complying with ANSI A136.1
	1. Applications: Interior floor and wall tile; except areas submerged or subject to prolonged wetting.

2.4 GROUT MATERIALS

1. Sanded Polymer-modified Portland Cement Tile Grout; complying with ANSI A118.6
2. Unsanded Cement Tile Grout complying with ANSI A118.6
3. Factory Blended, Polymer-Modified Tile Grout complying with ANSI A118.7
4. Premium Epoxy Mortar and Grout complying with ANSI A118.3

2.5 WATERPROOF MEMBRANE

1. General: Manufacturer's standard product complying with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
2. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.
3. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.

2.6 CRACK ISOLATION MEMBRANE

1. General: Manufacturer's standard product complying with ANSI A118.12 for performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
2. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and fabric reinforcement. Flexible, thin, load-bearing, waterproofing membrane system consisting of a premixed, quick-drying liquid latex and a reinforcing fabric, for installation under ceramic tile or stone complying with ANSI A118.12.
3. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer. Flexible bonded crack isolation membrane for use under tile that provides up to 1/8 inch (3 mm) protection from in-plane cracks: Fast setting, flexible, thin, load-bearing complying with ANSI A118.12.

2.7 FLEXIBLE SEALANT

1. Professional-grade, 100%-silicone sealant specifically formulated for heavy traffic expansion and movement joints, horizontal and vertical complying with ASTM standards

**PART 3 EXECUTION**

3.1 EXAMINATION

1. Examine surfaces to receive tilework and conditions under which tile will be installed. Inspect surfaces to be tiled to ensure proper bonding can be achieved, and to verify that surfaces are free of curing membranes, oil, grease, wax and dust.
2. Substrate Tolerances: Before tiling, inspect surfaces to be tiled to verify that the following tolerances are not exceeded. If tolerances are exceeded, provide specified leveling coat to achieve specified tolerances. Consult TCNA Manual.
	1. For tiles with at least one edge 15” in length, maximum allowable variation is 1/8” in 10’ from required plane, with no more than 1/16” variation in 24” when measured from the high points in the surface.
3. Installation of flooring materials indicates the acceptance of substrate.
4. Do not proceed with tilework until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.
	1. PREPARATION
5. Substrate Preparation: Prepare and clean substrate in accordance with installation standards and manufacturer's instructions, and as follows:
	1. Remove protrusions, bumps, and ridges by grinding or chipping
	2. Repair, fill, and level cracks, holes, depressions and rough or chipped areas in substrate using patching material recommended by setting materials manufacturer.
	3. Slab to have light broom finish when tile is installed by thin-set method.
	4. Before tiling, verify that all surfaces to be tiled are structurally sound true to plane, and fall within maximum variations shown below: Ensure that the substrate is within tolerances.
	5. Jobsite Blending: Blend tiles before installing in accordance with reference standards to produce an even range and distribution of color and finish.

3.3 INSTALLATION

* + 1. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI A108 Series for the materials being used.
		2. Install tile using TCNA methods specified on the drawings.
1. Install tile in pattern indicated. Align joints when adjoining tiles on floor, base, walls, and trim are same size. Adjust to minimize tile cutting and to avoid tile less than half size.
2. When possible, smooth cut edges of tile and/or use appropriate cutter or wet saw to produce smooth cuts. Provide straight cuts which align with adjacent materials
3. Extend tile into recesses and under equipment and fixtures to form a complete covering without interruption
4. Terminate tile neatly at obstructions, edges, and corners, without disruption of pattern or joint alignment.
5. Provide tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints smooth and even, without voids, cracks, or excess mortar or grout
6. Do not spread more material than can be covered within 10 to 15 minutes. If "skinning" occurs, remove mortar and spread fresh material. Spread mortar with notches running in one direction that shall be perpendicular to the pressing, pushing and pulling of tile during placement
7. Use a beating block and hammer or rubber mallet so that faces and edges of individual tiles are flush and level with faces and edges of adjacent tiles, and to reduce lippage.
8. For running bond/brick joint patterns utilizing tiles (square or rectangular) where the side being offset is greater than 18” (nominal dimension), the running bond offset will be a maximum of 33% unless otherwise specified by the tile manufacturer. If an offset greater than 33% is specified, specifier and owner must approve mock-up and lippage
	* 1. Comply with appropriate ANSI A108-2014 specification and current Tile Council of North America Handbook (TCNA) for appropriate method of installation for each specification. For thin set adhesive mortar application use following technique:
9. With the flat side of trowel, key mortar into substrate.
10. Using the appropriate size trowel, comb mortar in one direction with notched side of the trowel.
11. Set tile with a sliding motion, perpendicular to the mortar ridges.
12. Obtain as near 100% coverage as possible of mortar to tile.
13. Mortar coverage shall be no less than 85% and shall be sufficiently distributed to give full support under all corners and edges of the tile.
14. Note: 95-100% coverage is mandatory for wet and exterior areas. Periodically, remove sheets or individual tiles to assure proper bond coverage consistent with industry specifications.
	* 1. Tile in Steam Rooms: Install in accordance with TCNA method SR613.
		2. Tile on Stairs: Install in accordance with TCNA method S151.
		3. Install expansion and control joints in accordance with TCNA method EJ171.
		4. Apply tile and grout cleaners, sealers and maintenance products in accordance with manufacturer's printed instructions and technical data sheets.

3.4 GROUTING

1. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.
	1. Apply grout to produce full, smooth grout joints of uniform width, and free of voids and gaps
	2. Before grouting entire area do a test area to assure there will be no permanent staining or discoloration of the tile and to verify that the grout is easily removed from the surface. If necessary, pre-coat exposed surfaces of tile with a grout release as recommended by the manufacturer, as this will facilitate removal of the grout.
2. Clean sanding water, dust, and foreign substances from joints to be grouted.
3. Clean and dry tile surfaces.
4. After grouting, remove all grout residue promptly.

3.5 PROTECTION

1. 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.
	4. Leave finished installation clean and free of cracked, chipped, broken, un-bonded, and otherwise defective tile work
2. 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.
3. Protect from food products and chemicals which can cause staining for at least 14 days.
4. Protect from freezing and total water immersion for at least 21 days after installation.

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END OF SECTION