

GUIDELINE SPECIFICATIONS

SECTION 09320 - PORCELAIN

PART 1 – GENERAL

1.1 DESCRIPTION

- A. Furnish all labor, materials, tools, equipment and services necessary for and reasonably incidental to complete the tile work as shown on the drawings or specifications
- B. Related documents, drawings and general provisions of contract, including general and supplementary conditions and Division 1 specification sections apply to work of this section.
- C. Related Sections:
 - 1. Division 7, sealing expansion joints and other joints in tile work (joint sealant types, colors and manufacturers to be specified by Architect).
 - 2. Division 3, Concrete.

1.2 REFERENCE STANDARDS

- A. Comply with the following current editions of:
 - 1. American Society for Testing and Materials (ASTM).
 - 2. American National Standards Institute (ANSI).
 - 3. Tile Council of America (TCA) Handbook for Ceramic Tile Installation.

1.3 QUALITY ASSURANCE

- A. Provide tile materials of each type, color and finish from _____.
Provide setting, grouting and related materials of each type, color and finish obtained from one source.
- B. Deliver, store and handle materials in accordance with manufacturer's instructions.
- C. The contractor, by commencing the work of this section, assumes overall responsibility to assure that all assemblies, components and parts shown or required within the work of this section comply with contract documents

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and are compatible with each other and with the conditions and expected use.

- D. Installer Qualification: Engage an installer with a minimum of five (5) years commercial tile installations similar in material, design and scope to that indicated.
- E. Pre-Installation Meeting: Prior to tile installation, conduct a pre-installation project meeting. Contractor, Subcontractor, Material Suppliers, Architect and Owner representative shall be notified of the meeting.
- F. Field Mock-Up: Install a fully finished mock-up for each type tile installation. Mock-up shall be a minimum of 6'-0" x 6'0" and will be reviewed for joint quality, color range, pattern and workmanship.
- G. Extra Stock: Furnish extra stock of quantity equal to 3% of amount installed, in full-size units, for each type, color, size and finish of tile.

1.4 SUBMITTALS

- A. Verification Samples: Submit the following for each type, color, size and finish included in the work.
 - 1. Full size tile and trim shapes.
 - 2. Grout color samples.
 - 3. Sealant color samples.
- B. Product and Installation Data:
 - 1. Porcelain tile manufacturer's product and technical data indicating compliance with applicable standards herein.
 - 2. Mortar and grout manufacturer's technical data sheets indicating suitability for the installation specified and compliance with applicable standards.
 - 3. Sealant manufacturer's product and technical data.

1.5 ENVIRONMENTAL

- A. Comply with requirements of referenced standards and recommendations of material manufacturers for environmental conditions before, during and after installation.
- B. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer’s printed recommendations.
- C. Maintain minimum and maximum temperature limits as recommended by manufacturers.
- D. Protect adjacent surfaces during progress of the work in this section.
- E. Illuminate the work area during installation providing the same level and angle of illumination as will be available for final inspection.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. Furnish tile complying with “Standard Grade” requirements per ANSI A137.1 for types of tile indicated.
- B. Comply with ANSI Standard for Tile Installation Material for products and materials indicated for setting and grouting.

2.2 TILE

- A. Unglazed porcelain tile shall be from _____ series, as manufactured by _____ – contact: Creative Materials Corp. 518-452-9694 and shall conform to the requirements of ANSI A137.1 – 2000.

1. Size: _____ inches nominal

2. Trim: As indicated on drawings

3. Type and Finish: _____

4. Color: To be selected from _____ full range of colors available. For bidding purposes allow 90% to be chosen within price groups I and II and 10% from price group III.

5.Product Test Data:

PORCELAIN – TECHNICAL PROPERTIES

	NAME OF TEST	ASTM	REQUIREMENT
a.	Water Absorption	C373	0.5% Maximum
b.	Abrasive Wear	C501	100 Minimum
c.	Breaking Strength	C648	250lbs. Minimum
d.	Bond Strength	C482	50 psi Minimum
e.	Coefficient of Friction-Dry	C1028	.6 Minimum
f.	Coefficient of Friction-Wet	C1028	.6 Minimum
g.	Facial Dimensions (Range)	C499	1.5% Maximum
h.	Range of Thickness	C499	0.040
i.	Warpage (Diagonal)	C485	+/- 0.75 Maximum
j.	Wedging	C502	1.00% Maximum
k.	Scratch Hardness	C373	7/8

6.Provide matching trim shapes such as bullnose, corners and cove base when specified.

2.3 SETTING AND GROUTING MATERIALS:

- A. Latex-Portland Cement Mortar ANSI A118.4.
Utilize liquid latex additive
- B. Latex-Portland Cement Grouts. ANSI A118.6.
Utilize liquid latex additive

2.4 EXPANSION JOINTS, CONTROL, CONTRACTION, AND ISOLATION JOINTS:

- A. Refer to TCA Handbook, Method EJ171-99 for recommendations on locating and detailing various types of construction joints. NOTE: Architect must specify expansion joints and show location and details on drawings.
- C. Use sealants complying with ASTM C920 according to Type, Grade, Class and Uses required.
- C. Provide marble threshold trim strips, or other metal edging material where tile

terminates at dissimilar finishes as shown or specified.

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PART 3 – EXECUTION

3.1 EXAMINATION

- A. Examine substrates where tile will be installed for compliance with requirements for installation tolerances and other conditions effecting performance of installed tile. Verify that substrates for setting tile are well cured, dry, clean, and free from oil or waxy films, and curing compounds.
- B. Do not proceed with installation until unsatisfactory conditions have been corrected. Commencement of work signifies acceptance of substrate and installation conditions.

3.2 PREPARATION

- A. Substrate Preparation: Repair 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. Concrete slab to have steel trowel and broom finish when tile is installed by the thin-set method.
 - 4. Insure substrate is within the following tolerances:
 - a. Horizontal surfaces (floors) - Maximum variation in substrate shall not exceed 1/8" in ten feet from required plane: 1/4" in ten feet when substrate is recessed or depressed to receive full mortar bed.
 - b. Vertical surfaces (walls) - Maximum variation in substrate shall not exceed 1/8" in eight feet from required plane.
- B. 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

- A. Manufacturer's Instructions: Perform work in compliance with instructions and with setting materials manufacturers' instructions.
- B. General Installation Standards: Install tile in accordance with ANSI standards and appropriate TCA methods.
 - 1. Thin-set Floor Installations: TCA Method F 113-2K.
 - 2. Thin-set Wall Installations: TCA Method W243-2K.
- C. Installing Tile:
 - 1. Install tile in pattern indicated. Align joints when adjoining tiles on floor, base, walls and trim are same size. Center tile fields in both directions. Adjust to minimize tile cutting and to avoid tile less than half size.
 - 2. Grind cut edges of tile. Provide straight cuts which align with adjacent materials.
 - 3. Extend tile into recessed and under equipment and fixtures to form a complete covering without interruption.
 - 4. Terminate tile neatly at obstructions, edges, and corners, without disruption of 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 grout. Maximum joint size 1/4".
 - 6. Mix mortar in strict accordance with manufacturer's recommendations.
 - 7. Apply setting material in accordance with manufacturer's directions and install tile before mortar has started initial cure. When installing unglazed paver tile up to 12"x 12" in size, the notch trowel used should be minimum of 1/4"x 3/8"x 1/4". For larger unit tiles use a nominal 3/8"x 9/16"x 3/4" round notch trowel.

8. Do not spread more material than can be covered within 10 to 15 minutes maximum. If skinning occurs, remove mortar and spread fresh material. Spread mortar with notches running in one direction.

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9. Place tile in fresh mortar, press, push and pull the tile in to achieve as near 100% coverage and contact of tile with setting material and substrate as possible. The coverage shall be sufficiently distributed to give full support of the tile. Make sure that all corners and edges are well backed with mortar. Leave no hollow corners or edges. NOTE: The 100% coverage is particularly important for wet or exterior areas or areas with heavy loading or traffic.
10. Ensure there is a minimum 3/32" of mortar between tile and substrate after tile has been beaten into place.
11. Use a beating block and mallet so that faces and edges of individual tiles are flush and level with faces and edges of adjacent tiles, and to reduce lippage.

D. Grouting:

1. Install grout in accordance with ANSI A108.10 and manufacturer's recommendations.
2. Mix grout material in strict accordance with manufacturer's directions.
3. Apply grout to produce full, smooth grout joints of uniform width, even with edge of tiles and free of voids and gaps.
4. Before grouting entire area, do a test area, to assure there will be no permanent staining or discoloration of the tile. If necessary, precoat exposed surfaces of tile with a grout release as recommended by the manufacturer.
5. Cure all setting and grouting materials in accordance with manufacturers recommendations.

E. Cleaning and Protection:

1. Remove grout release and clean tile surfaces so they are free of grout residue and foreign matter, in accordance with manufacturer's instructions. Flush surface with clean water before and after cleaning. Do not use acid or acid-based cleaners to clean glazed tiles or tile grouted with latex modified grout.

2. When applicable, acid cleaning of unglazed tile grouted with portland cement grout shall not be done before 10 days after grouting. Tile and grout shall be soaked with water before cleaning. In the absence of a recommendation from the grout manufacturer, acid cleaning may be done with a saturated solution of sulfamic acid, mixed in accordance with manufacturer's recommendations and ANSI A108.

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3. After cleaning, provide protective covering and maintain conditions to protect tile work from damage or deterioration. Where tiled surfaces will be subject to equipment or wheel traffic or heavy construction traffic, and during move-in of furniture and equipment, cover protective covering with 1/4" hardboard or plywood.
4. Final clean up shall be done by finishing or polishing with a terry cloth, cheesecloth, or similar pad.
5. Leave finished installation clean and free of cracked, chipped, broken, unbonded and otherwise defective tile work.

NOTE TO SPECIFIER:

This form document is intended as a general guideline only. It is the responsibility of the design professional to revise this form to suit specific requirements of the project. There are no representations or warranties that the general information contained within this document is suitable for the specific requirements of the project. Consult your installation and maintenance material manufacturers specified for technical assistance. The design professional should refer to the current edition of the TCA handbook and other reference standards for additional information. The design professional should coordinate this section with the drawings and with general provisions of the contract, including general and supplementary conditions and Division I general requirements.

For further information please contact us at Creative Materials Corp. (518) 452-9694, or 800-207-2967.