

## CERAMIC TILING 09 30 13



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This 3-part specification utilizes the Construction Specifications Institute (CSI) *Manual of Practice*, including *MasterFormat*, *SectionFormat*, and *PageFormat* and is a manufacturer-specific proprietary product specification using the proprietary method of specifying applicable to project specifications and masterguide specifications. Optional text is indicated by brackets [ ]; delete optional text in final copy of specification. Specifier Notes typically precede specification text; delete notes in final copy of specification. Trade/brand names with appropriate symbols typically are used in Specifier Notes; symbols are not used in specification text. Metric conversion, where used, is soft metric conversion.

This 3-part specification specifies concrete tile manufactured by Arto Brick California Pavers. Revise section number and title below to suit project requirements, specification practices and section content. Refer to CSI *MasterFormat* for other section numbers and titles.

### **PART 1 GENERAL**

#### 1.01 SUMMARY

- A. Section Includes: Handmade ceramic tile for use as flooring & wall veneer
- B. Related sections:
  - 1. Division 03 Section: Self-Leveling Underlayment
  - 2. Division 07 Section: Joint Sealants
  - 3. Division 09 Section: Concrete and Masonry Coatings
  - 4. Division 09 Section: Waterproofing Membranes

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 01 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

#### 1.02 REFERENCES

- A. American National Standards Institute (ANSI):
  - 1. ANSI A108.1A, 2005 - Specifications for Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar.
  - 2. ANSI A108.1B, 2005 - Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
  - 3. ANSI A108.1C, 2005 - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar -or- Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
  - 4. ANSI A108.4, 2005 - Specifications for Ceramic Tile Installed with Organic Adhesives or Water-Cleanable Tile Setting Epoxy Adhesive.
  - 5. ANSI A108.5, 2005 - Specifications for Ceramic Tile Installed with Dry-Set Portland Cement

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Mortar or Latex-Portland Cement Mortar.

6. ANSI A108.6, 2005 - Specifications for Ceramic Tile Installed with Chemical-Resistant, Water-Cleanable Tile-Setting and -Grouting Epoxy.
  7. ANSI A108.8, 2005 - Specifications for Ceramic Tile Installed with Chemical-Resistant Furan Mortar and Grout.
  8. ANSI A108.9, 2005 - Specifications for Ceramic Tile Installed with Modified Epoxy Emulsion Mortar/Grout.
  9. ANSI A108.10, 2005 - Specifications for Installation of Grout in Tilework.
  10. ANSI A118.1, 2005 - Standard Specification for Dry-Set Portland Cement Mortar.
  11. ANSI A118.3, 2005 - Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive.
  12. ANSI A118.4, 2005 - Latex-Portland Cement Mortar.
  13. ANSI A118.5, 2005 - Chemical-Resistant Furan Mortar and Grout.
  14. ANSI A118.6, 2005 - Standard Ceramic Tile Grouts.
  15. ANSI A118.7, 2005 - Polymer Modified Cement Grouts
  16. ANSI A118.8, 2005 - Modified Epoxy Emulsion Mortar/Grout.
  17. ANSI A118.9, 2005 - Test Methods and Specifications for Cementitious Backer Units
  18. ANSI A118.10, 2005 - Load bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile and Dimensional Stone.
  19. ANSI A118.11, 2005 - Exterior Grade Plywood (EGP) Latex-Portland Cement Mortar.
  20. ANSI A136.1, 2005 - Organic Adhesives for Installation of Ceramic Tile.
- B. American Society of Testing and Materials (ASTM International)
1. C67 Test Methods for Sampling and Testing Brick and Structural Clay Tile
  2. C144 Standard Specification for Aggregate for Masonry Mortar.
  3. C150 Specification for Portland Cement
  4. C207 Standard Specification for Hydrated Lime for Masonry Purposes.
  5. C270 Specification for Mortar for Unit Masonry
  6. C482 Test Method for Bond Strength of Ceramic Tile to Portland Cement Paste
  7. C847 Standard Specification for Metal Lath.
  8. C1028 Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method
  9. D226 / D226M Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
  10. D4397 Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- C. Tile Council of North America (TCNA)
1. TCA Handbook for Ceramic Tile Installation, 2011.

### 1.03 SYSTEM REQUIREMENTS

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### A. Performance Requirements

1. Absorption (ASTM C67): Not more than 12%.
2. Freeze Thaw Resistance (ASTM C67): Unaffected after 50 cycles.
3. Compressive Strength (ASTM C67): Not less than 4000 psi (27,560 kPa).
4. Bond Strength (ASTM C482): 50 psi (0.3 MPa).
5. Coefficient of Friction (ASTM C1028): 0.6 dry; 0.6 wet.
6. Breaking Load (ASTM C67): Minimum load 300 lbs

Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 01 Submittal Procedures Section.

### 1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 01 Submittal Procedures Section.
- B. Product Data: Submit product data for specified products.
- C. Shop Drawings: Indicate layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, accessories and setting details.
- D. Maintenance Data: Include recommended cleaning methods, cleaning materials, stain removal methods and polishes and waxes.

Specifier Note: Article below should include prerequisites, standards, limitations and criteria that establish an overall level of quality for products and workmanship for this section. Coordinate article below with Division 01 Quality Assurance Section.

- E. Samples: Submit selection and verification samples of finishes, colors and textures.

### 1.05 QUALITY ASSURANCE

- A. Qualifications
  1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project for a minimum of 5 years.
- B. Regulatory Requirements and Approvals: [Specify applicable requirements of regulatory agencies].
  1. [Code agency name].
    - a. [Report or approval number].

Specifier Note: Retain paragraph below for erected assemblies (either onsite or offsite) required for review of construction, coordination of work of several sections, testing or observation of operation. Mock-ups, when accepted or approved, establish standards by which work will be judged. Coordinate below with Division 01 Quality Control (Mock-Up Requirements) Section.

- C. Mock-Ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods. Obtain Owner's and Architect's acceptance of finish color, texture and pattern and workmanship standard(s). Comply with Division 01 Quality Control (Mock-Up Requirements) Section.
  1. Mock-Up Size: [Specify mock-up size].

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2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

Specifier Note: Article below should include special and unique requirements. Coordinate article below with Division 01 Product Requirements Section.

### 1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 01 Product Requirements Section.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- D. Storage and Protection: Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer

### 1.07 ENVIRONMENTAL REQUIREMENTS

- A. Install mortar, set and grout tile when surface temperature is a minimum of 50 degrees F (10 degrees C) and rising but no greater than 90 degrees F (32 degrees C).
- B. Do not install mortar, set or grout tile when inclement weather conditions are expected within 48 hours of completion.

### 1.08 EXTRA MATERIALS

- A. Extra materials: Provide \_ ft2 of each size, color and surface finish of tile specified.

## PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

### 2.01 TILES

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to 3-part specification. Retain or delete paragraph below per project requirements and specifier's practice.

- A. Manufacturer: Arto Brick / California Pavers.
  1. Contact: 15209 S. Broadway St., Gardena, CA 90248-1823; Telephone: (310) 768-8500; Fax: (310) 768-8544; website: [www.artobrick.com](http://www.artobrick.com).

Specifier Note: Edit Paragraph below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 01 Project Requirements (Product Substitutions Procedures) Section.

- B. Substitutions: No substitutions permitted.

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Specifier Note: Paragraphs below list proprietary products offered by Arto Brick California Pavers. All measurements are nominal; consult manufacturer regarding exact measurements and product options. Select product characteristics required; delete characteristics not required.

### 2.02 TILES

#### A. Style

1. Cast – Glazed
2. Cast – Unglazed
3. Extruded – Glazed
4. Extruded – Unglazed
5. Pressed – Glazed
6. Pressed - Unglazed

#### B. Size

1. 15  $\frac{3}{4}$ " x 15  $\frac{3}{4}$ "
2. 7  $\frac{3}{4}$ " x 15  $\frac{3}{4}$ "
3. 11  $\frac{3}{4}$ " x 11  $\frac{3}{4}$ "
4. 5  $\frac{11}{16}$ " x 11  $\frac{3}{4}$ "
5. 8" x 8"
6. 5  $\frac{11}{16}$ " x 5  $\frac{11}{16}$ "
7. 3  $\frac{13}{16}$ " x 3  $\frac{13}{16}$ "
8. 2  $\frac{3}{4}$ " x 5  $\frac{11}{16}$ "
9. 9  $\frac{3}{4}$ " Octagon with 3  $\frac{13}{16}$ " Dot
10. 8 x 8 Hexagon

Specifier Note: Select color(s) below. If more than one color is selected, create color designators and coordinate with drawings.

#### C. Color

1. Barcelona
2. Light Copper
3. Red Iron
4. Walnut Spice

Specifier Note: Refer to color chart to view color options. Request samples from Arto or distributor to approve color variation.

### 2.03 ACCESSORIES

#### A. 12x12 Stairtread and Corner

1. 11  $\frac{3}{4}$ " x 11  $\frac{3}{4}$ " with 1  $\frac{1}{4}$ " bullnose

#### B. 12x12 Surface Bullnose (SBN)

1. 11  $\frac{3}{4}$ " x 11  $\frac{3}{4}$ "

#### C. 3x8 Chair Rail

1. 2  $\frac{1}{2}$ " x 8  $\frac{1}{2}$ "

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Specifier Note: Indicate if color and glaze specified for accessories differ from tile color and glaze.

### 2.04 MATERIALS

Specifier Note: Select from the following four paragraphs and delete materials not specified

- A. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
- B. Epoxy Adhesive: ANSI A118.3, thinset bond type.
- C. Mortar Bed Materials:
  - 1. Portland cement: ASTM C150, type 1, gray or white.
  - 2. Hydrated Lime: ASTM C207, Type S.
  - 3. Sand: ASTM C144, fine.
  - 4. Latex additive: As approved.
  - 5. Water: Clean and potable.
- D. Mortar Bond Coat Materials:
  - 1. Dry-Set Portland Cement type: ANSI A118.1.
  - 2. Latex-Portland Cement type: ANSI A118.4.
  - 3. Epoxy: ANSI A118.3, 100 percent solids.

Specifier Note: Select one of the following three paragraphs

- E. Standard Grout: Sanded cement grout as specified in ANSI A118.6; color as selected.
- F. Polymer Modified Grout: Sanded cement grout as specified in ANSI A118.7; color as selected.
- G. Epoxy Grout: ANSI A118.8, 100 percent solids epoxy grout; color as selected.

Specifier Note: Select one of the following two paragraphs or delete if no membrane specified

- H. Cleavage Membrane:
  - 1. No. 15 (6.9 kg) asphalt saturated felt, ASTM D226, Type 1
  - 2. Polyethylene film, ASTM D4397, 4.0 mil thickness.

Specifier Note: Select one of the following six paragraphs or delete if no membrane is specified.

- I. Waterproofing Membrane in accordance with ANSI A118.10:
  - 1. Chlorinated Polyethylene Sheet with polyester fabric reinforcing.
  - 2. Fabric Reinforced, Fluid-Applied elastomeric membrane.
  - 3. Un-Reinforced, Fluid-Applied elastomeric membrane.
  - 4. Polyethylene Sheet Product.
  - 5. Fabric-Reinforced, Modified-Bituminous Sheet Product.

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6. Urethane Waterproofing and Tile-Setting Adhesive Product.

Specifier Note: Select one of the following three paragraphs or delete if no membrane specified.

- J. Membrane at Walls
  1. No. 15 (6.9 kg) asphalt saturated felt, ASTM D226, Type 1.
  2. 4 mil (0.1 mm) thick polyethylene film, ASTM D4397.
  3. Reinforced asphalt paper.

Specifier Note: Select one of the following two paragraphs or delete if reinforcement specified.

- K. Reinforcing Mesh: 2 by 2 inch (50 by 50 mm) size weave of 16/16 wire size; welded fabric, galvanized.
- L. Metal Lath: ASTM C847, Flat expanded diamond mesh, not less than 2.5 lbs/SY, galvanized finish.

Specifier Note: Delete paragraph if no backer board is specified

- M. Cementitious Backer Board: ANSI A118.9; High density, cementitious, glass fiber reinforced with 2 inch (50 mm) wide coated glass fiber tape for joints and corners:
  1. Thickness: 1/2 inch (13 mm).
  2. Thickness: 5/8 inch (16 mm).

### PART 3 EXECUTION

Specifier Note: Paragraph below is an addition to CSI *SectionFormat* and a supplement to this three-part specification. Retain or delete paragraph below per project requirements and specifier's practice.

#### 3.01 MANUFACTURER'S INSTRUCTIONS

- A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions and product carton instructions for installation.

#### 3.02 EXAMINATION

- A. Site Verification of Conditions: Verify that substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.
  1. Concrete slabs shall have roughened or troweled surfaces to allow for bonding.
  2. Test concrete slabs for moisture emission rate and alkalinity. Obtain instructions if not within the limits recommended by setting material manufacturer.
  3. Ensure all substrates are clean and free of curing compounds and other contaminants.

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4. Maximum substrate variation from required plane shall be 1/8" in 10 feet or as otherwise specified.
- B. Movement joints
1. Verify that movement joints are installed as detailed in EJ171 of the TCA Handbook

### 3.03 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
- E. Prepare substrate surfaces for installation in accordance with adhesive manufacturer's instructions.

### 3.04 INSTALLATION

- A. Install tile and grout in accordance with applicable requirements of ANSI A108, manufacturer's instructions, and TCA Handbook recommendations.
- B. Consult TCA Handbook for details applicable to each specific installation type.

### 3.05 CLEANING

- A. Clean with water and soft nylon brushes only; do not allow mortar to set up on surfaces.
  1. Excessive water may affect curing of grout and mortar bed.
- B. Do not use acid or alkali cleansers which may damage the surface of the tile.
- C. Test all products before wholesale application.

### 3.06 PROTECTION

- A. Do not permit traffic over finished floor surface for 72 hours after installation.
- B. Cover floors and protect from dirt and residue from other trades.

**END OF SECTION**