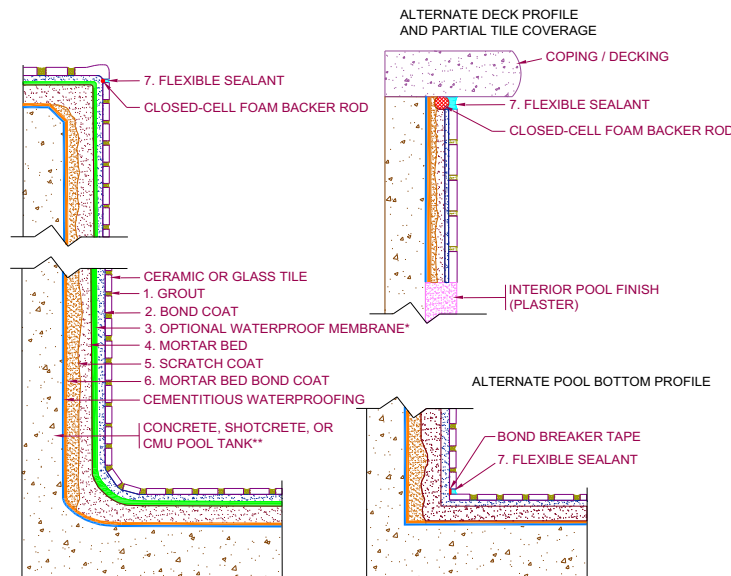


POOLS AND WATER FEATURES

Pool or Fountain with Porcelain/Ceramic Tile
 Concrete, Shotcrete, or CMU Pool Tank
 Cementitious Waterproofing
 Bonded Mortar Bed
 Optional Waterproof Membrane

Ver. 06.12.20

MAPEI: MP602
 TCNA: P602



*USE OF AN ANSI A118.10 WATERPROOF MEMBRANE IS OPTIONAL. SEE TCNA MEMBRANE OPTIONS.

**MAY BE TREATED WITH A PENETRATING COLLOIDAL SILICATE PRIOR TO APPLICATION OF CEMENTITIOUS WATERPROOFING. SEE TCNA PREPARATION BY OTHER TRADES

SCALE: N.T.S.

MAPEI Products Assembly	ANSI	ISO 13007	Minimum Performance Requirements from TCNA Guidelines
1. Grout Options: A. Kerapoxy® CQ B. Ultracolor® Plus FA	A118.3 A118.7, A138.1	R2/RG CG2WAF	Cementitious Grout: ANSI A118.6 or better, or ISO 13007 CG1 or better Epoxy Grout: ANSI A118.3, or ISO 13007 RG
2. Bond Coat Options: A. Granirapid® System B. Kerabond/Keralastic™ System C. Keraflex™ Super	A118.4HF, A118.11, A118.15HF A118.4E, A118.11, A118.15E A118.4HTE, A118.11, A118.15HTE	C2FS2P2 C2ES2P2 C2TES1P1	Cementitious Bond Coat: ANSI A118.4 or better, or ISO 13007 C2S1 or better Epoxy Bond Coat: ANSI A118.3, or ISO 13007 R1 or better
3. Optional Waterproof Membrane Options: A. Mapelastix® Turbo 1) Fiberglass Mesh	A118.10, A118.12		Waterproof Membrane: ANSI A118.10 Crack Isolation Membrane: ANSI A118.12
4. Mortar Bed Options: A. Planislope™ RS B. Modified Mortar Bed	A108.1 (A, B, C) A108.1 (A, B, C)		Cementitious Waterproofing: Recommended by manufacturer for use in positive and negative hydrostatic pressure applications and swimming pools. Movement Joints: EJ171 and ASTM C1193
5. Scratch Coat Options: A. Same as Item 2 and/or Item 4			Flexible Sealant: ANSI A118.01, 3.7 and ASTM C920
6. Mortar Bed Bond Coat Options: A. Same as Item 2			
7. Flexible Sealant: A. Mapesil™ T	A108.01, 3.7		

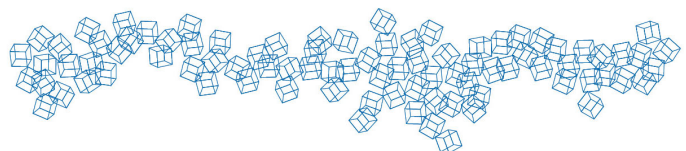
Environmental Classifications
 Res3, 4, 6, 7; Com3, 4, 6, 7

Materials for Green/Sustainable Design
 Installation Materials that meet ANSI A138.1, *The American National Standard Specifications for Sustainable for Sustainable Ceramic Tiles, Glass Tiles, and Tile Installation Materials.*

CAD details and/or specifications are provided as guides. They are intended to assist in the proper detailing or specifying of a project. They are not to scale or intended for construction. The guide specification must be reviewed for code compliance and edited to make it project-specific. Drawings are based on the Tile Council of North America's (TCNA) Handbook for Ceramic, Glass, and Stone Tile Installation and the Terrazzo, Tile and Marble Association of Canada's (TTMAC) Tile Installation Manual. MAPEI products are listed as options and are substituted for TCNA's and TTMAC's listed ANSI and ISO (ISO 13007) standards. For natural stone tiles, refer to Natural Stone Institute, TCNA Natural Stone Tile Selection and Installation Guide and consult stone tile supplier for suitability. Please refer to the referenced handbooks and current data sheets for complete instructions and application limitations. Some installation methods and component materials may not be referenced. MAPEI encourages the user to consult all approved resources to ensure a complete assembly.



MAPEI Corporation
 1144 E. Newport Center Drive
 Deerfield Beach, FL 33442
 Phone: 1-800-992-6273



Guide Specification: 09 30 00 - Tiling
POOLS AND WATER FEATURES
Concrete, Shotcrete, or CMU Pool Tank
Cementitious Waterproofing
Bonded Mortar Bed
Optional Waterproof Membrane
Ceramic Tile, Glass Tile

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation materials.
- B. Mortar materials.
- C. Setting materials.
- D. Grout materials.
- E. Waterproof membrane.
- F. Crack isolation membrane.
- G. Flexible sealant.
- H. Stone, tile, and grout maintenance, cleaners and grout haze removers.

1.02 RELATED SECTIONS

- A. Section 03 30 00 – Cast-in Place Concrete.
- B. Section 03 39 00 – Concrete Curing.
- C. Section 03 40 00 – Precast Concrete.
- B. Section 04 20 00 – Unit Masonry (CMU wall substrates).
- D. Section 05 40 00 – Cold-Formed Metal Framing.
- E. Section 07 60 00 – Flashing and Sheet Metal.
- F. Section 07 92 13 – Elastomeric Joint Sealants.
- G. Section 09 34 00 – Waterproofing-Membrane Tiling.
- H. Section 13 11 00 – Swimming Pools.
- I. Section 13 17 00 – Tubs and Pools.

1.03 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI A108 Series/A118 Series – American National Standards for Installation of Ceramic Tile.
 - 2. ANSI A137.1 – American National Standard for Ceramic Tile.
 - 3. ANSI A137.2 – American National Standard for Glass Tile.
 - 4. ANSI A138.1 – American National Standard Specifications for Green Squared Certification for Tiles and Installation Materials.

- B. ASTM International (ASTM):
 1. ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 2. ASTM C144 – Standard Specification for Aggregate for Masonry Mortar. (Jobsite Mix)
 3. ASTM C150 – Standard Specification for Portland Cement. (Jobsite Mix)
 4. ASTM C645 – Standard Specification for Nonstructural Steel Framing Members.
- C. TCNA (HB) – Handbook for Ceramic Tile, Glass, and Stone Installation; Tile Council of North America.
- D. Specifications Guide 09 30 00 – Tile Installation Manual (TTMAC).
- E. International Organization for Standardization (ISO):
 1. ISO 13007 – Ceramic tiles – Grout and adhesives.
- F. Leadership in Energy and Environmental Design (LEED®) – U.S. Green Building Council.

1.04 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 – Administrative Requirements.
- B. Product Data: Manufacturer's technical information for each product specified.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- D. Samples: Color charts for selection of grout.
- E. Manufacturer's Certificates: Certify products meet or exceed specified requirements. When applicable, submit a Master Grade Certificate signed by the manufacturer and the installer certifying that products meet or exceed the specified requirements of ANSI A137.1, ANSI A137.2, and/or ANSI A137.3.
- F. Installation Instructions: Manufacturer's printed instructions for each product.
- G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and maintenance coatings.

1.05 QUALITY ASSURANCE

- A. Ensure Single-Source Warranty Requirements and Compatibility of Products: Provide cleaners, sealing and maintenance products, tile grout, setting materials, underlayments, additives, accessories and factory-prepared dry-set mortars from the same manufacturer.
- B. Installer Qualifications:
 1. Engage an experienced installer who has completed tile installations similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance. Installer to have a minimum of five years' experience.
 2. Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
 3. Installer's supervisor for the project must hold the International Masonry Institute's Foreman Certification.
 4. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.
- C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1.06 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section.
- B. Require attendance of installation material manufacturer, tile supplier, tile installer and installers of related work. Review installation procedures and coordination required with related work.
- C. 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.

1.07 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 and other causes.
- B. Protect setting materials from freezing and overheating in accordance with manufacturer's instructions.
- C. Store tile and setting materials on elevated platforms, under cover and in a dry location and protect from contamination, dampness, freezing and overheating.
- D. Do not use frozen materials unless specifically allowed by manufacturer.
- E. Deliver and store materials on site at least 24 hours before work begins.
- F. Provide heated and dry storage facilities on site.

1.08 ENVIRONMENTAL REQUIREMENTS

- 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. For Exterior Applications:
 - 1. Build a temporary shelter and when needed use indirect auxiliary heaters to maintain an adequate temperature level in the working environment and surfaces.
 - 2. Exhaust temporary heaters to exterior to prevent damage to the work or injury to personnel from carbon monoxide emissions.
 - 3. Maintain substrate and ambient temperatures in tiled areas between 50°F (10°C) and 95°F (35°C) during installation and for at least 7 days after completion, unless otherwise indicated in the product instructions and/or ANSI A108 installation standards.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: MAPEI Corporation, which is located at: 1144 E. Newport Center Dr., Deerfield Beach, FL 33442; www.mapei.us. Toll-Free Tel.: 800-992-6273; Fax: 954-246-8805. Contact Mike Granatowski at (949) 212-2363 or email mgranatowski@mapei.com.
- B. Acceptable Manufacturer: Daltile Corporation, 7834 C.F. Hawn Freeway, Dallas, TX 75217. www.daltile.com/countertops-product-category/panoramic-porcelain. Contact Daltile Customer Service at (800) 449-3591, or Raul Amat at (972) 400-3777 or email raul.amat@daltile.com.

- C. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 – Product Requirements.
- D. Substitutions: Not permitted.

2.02 SURFACE PREPARATION MATERIALS

- A. Trowelable Floor/Wall Patch and Render Mortar: Quick-setting, polymer-modified, fiber-reinforced, cementitious rendering, patching, and leveling mortar, can be applied at 1/8 inch to 1-1/4 inch (3 mm to 3.2 cm).
Product: MAPEI, Planitop 330 Fast.
- B. Trowelable Concrete Floor Patch: High-Performance, Fast-Setting Cementitious Patching Compound. Can be applied at 1/16 inch to 1-1/2 inches (1.5 mm to 3.8 cm) neat and from 1-1/2 inches to 3 inches (3.8 cm to 7.6 cm) neat in areas no larger than 24 sq. ft. (2.23 m2).
 - 1. Product: MAPEI, Mapecem Quickpatch.

2.03 MORTAR ACCESSORIES

- A. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
 - 1. Cleavage Membrane: Asphalt felt, ASTM D226, Type I (No. 15); or polyethylene sheeting, ASTM D4397, 4.0 mils (0.1 mm) thick.
 - 2. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 inches by 2 inches (5 cm by 5 cm) by 0.062-inch (1.57 mm) diameter; comply with ASTM A185 and ASTM A82 except for minimum wire size.
 - 3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C847.
 - 4. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
 - 5. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
 - 6. Configuration over Studs and Furring: Flat.
 - 7. Configuration over Solid Surfaces: Self-furring.
 - 8. Weight: 2.5 lbs./sq. yd. (1.4 kg/sq. m).
 - 9. Weight: 3.4 lbs./sq. yd. (1.8 kg/sq. m).

2.04 MORTAR BED MATERIALS

- A. Thick Bed (Dry Pack) and Render Mortar: Pre-blended polymer-modified, dry-pack, scratch coat and wall render, and concrete patch; can be applied 1/4 inch to 2 inches (6 mm to 5 cm), ANSI A108.1C.
 - 1. Product: MAPEI, Modified Mortar Bed.
- B. Thick Bed (Dry Pack) Mortar: Rapid-setting, pre-blended, polymer-modified, cement-based, sloping mortar, can be applied 1/4 inch to 3 inches (6 mm to 7.5 cm) and up to 5 inches (12.5 cm) in trenches, ANSI A108.1C.
 - 1. Product: MAPEI, Planislope RS.

2.05 SETTING MATERIALS

- A. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid-Setting: ANSI A118.4F, ANSI A118.11, ANSI A118.15F, and ISO 13007 C2FS2P2.
 - 1. Product: MAPEI, Granirapid System.
- B. Improved Modified Dry-Set Cement Mortar: ANSI A118.4E, ANSI A118.11, ANSI A118.15E, and ISO 13007 C2ES2P2.
 - 1. Product: MAPEI, Kerabond/Keralastic System.
- C. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile with High-Transfer Technology: ANSI A118.4HTE, ANSI A118.11, ANSI A118.15HTE, and ISO 13007 C2TES1P1.
 - 1. Product: MAPEI, Keraflex Super.

2.06 GROUT MATERIALS

- A. High-Performance Cement Tile Grout: For grout joints from 1/16 inch to 3/4 inch (1.5 mm to 19 mm) and meeting ANSI A118.7 and ISO 13007 CGWAF.
 - 1. Product: MAPEI, Ultracolor Plus FA.
- B. Premium Epoxy Mortar and Grout: For grout joints from 1/16 inch to 3/8 inch (1.5 mm to 10 mm), ANSI A118.3 and ISO 13007 R2/RG.
 - 1. Product: MAPEI, Kerapoxy CQ
 - 2. Provide product with a VOC content of 65,000 ppm (65 grams per L) or less when calculated according to 40 CFR 59, Subpart D.

2.07 WATERPROOF/CRACK ISOLATION MEMBRANES

- A. General: Manufacturer's standard product that complies with ANSI A118.10, ANSI A118.12, and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
 - 1. Product: Products from MAPEI.
- B. Cementitious-Binder-Based Membrane: Rapid-drying, two-component, waterproofing and crack-isolation membrane, suitable for steam showers, IAPMO-listed, ANSI A118.10 and ANSI A118.12.
 - 1. Product: MAPEI, Mapelastic Turbo.
 - a. With MAPEI, Reinforcing Fabric.

2.08 FLEXIBLE SEALANT

- A. Sealant: 100-Percent Silicone. Heavy-traffic expansion and movement joints, horizontal and vertical complying with ASTM standards; ASTM – Meets C920, Type S, Grade NS, Class 25, Use T1, T2, NT, I, M, G, A and O, and conforms to C794 adhesion properties, (#23 Clear color meets ASTM C920, Type S, Grade NS, Class 50, Use NT).
 - 1. Product: MAPEI, Mapesil T.

2.09 GROUT RELEASE

- A. Grout Release: High-performance sacrificial coating that protects the tile surface from grout stains, improves cleanability and reduces the risk of grout haze or film residue, interior and exterior applications on all-natural stone (marble, limestone, sandstone, slate, granite and travertine, etc.), porcelain/ceramic tiles, masonry and quarry tiles.
 - 1. Product: MAPEI, UltraCare Grout Release.

2.10 STONE, TILE AND GROUT MAINTENANCE, CLEANERS AND GROUT HAZE REMOVERS

- A. Neutral pH Cleaner: Highly concentrated, zero-VOC, for ceramic, porcelain and natural stone surfaces. Helps prevent soap scum buildup and hard water deposits.
 - 1. Product: MAPEI, UltraCare Concentrated Tile & Grout Cleaner.
- B. High-Alkaline Cleaner: Highly concentrated and degreaser that quickly removes waxes, grease, oil, light soap scum, mildew and algae stains. For areas that have been neglected or subject to heavy use.
 - 1. Product: MAPEI, UltraCare Heavy-Duty Stone, Tile & Grout Cleaner.
- C. Epoxy Grout Haze Remover: Professional-strength water-based formulation that helps remove epoxy grout haze from tile and natural stone surfaces, natural citrus scent, non-flammable and easy to use.
 - 1. Product: MAPEI, UltraCare Epoxy Grout Haze Remover.

2.11 MIXES

- A. Proportion and mix materials in accordance with manufacturer's most current written instructions and applicable ANSI standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine substrates for compliance with requirements for conditions affecting performance of the work. Refer to ANSI A108.01, ANSI A108.02 and if applicable ANSI A108.19.
- B. Do not proceed with tilework until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.
- C. Underlayment, patching, leveling and rendering materials, when needed, must be from the setting materials supplier. For improved warranty and single-source responsibility.

3.02 INSTALLATION

- A. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI A108 Series for the materials being used.
- B. When underlayment, patching, leveling and rendering materials are needed, they must be from the supplier of the setting materials. For improved warranty and single-source responsibility.
- C. Apply waterproof membrane only in dry weather, when ambient and substrate temperatures are above 40°F (4°C).
- D. Waterproofing: Install necessary components to form a watertight installation. Dry film thickness (DFT) must comply with manufacturer's recommendations.
- E. Install tile in accordance with TCNA methods specified on the drawings.
- F. Install tile in accordance with TCNA methods listed below.
 - 1. Floor and Wall Tile at pool: TCNA method P602.
- G. Expansion and Control Joints: TCNA method EJ171.
- H. Apply tile and grout cleaners, sealers and maintenance products in accordance with manufacturer's printed instructions and technical data sheets.
- I. Fill no more than the pool can be filled with fresh water, the rate of filling being the same as when it was originally filled for the water test, 24 inches to 30 inches (61 cm to 76 cm) per day. If the pool water is heated, the temperature should be raised slowly, at a rate not exceeding about 2°F (1.1°C) per hour.

3.03 GROUTING

- A. Grout joints in accordance with manufacturer's instructions and ANSI A108.6 and/or ANSI A108.10.
- B. Remove standing water, dust, and foreign substances from joints to be grouted.
- C. Clean and dry tile surfaces.
- D. After grouting, remove all grout residue promptly.

3.04 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 14 days after installation, unless manufacturer's instructions allow a shorter period.
- C. Protect from stain-causing food products and chemicals for at least 14 days.

END OF SECTION