

SECTION 09 30 00

TILE AND STONE SETTING MATERIALS AND ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* MAPEI Americas U.S.A.; mortars and grouts for ceramic tile, stone, porcelain, and other materials.
This section is based on the products of MAPEI Americas, which is located at:
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and

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Web:[www.mapei.com/CA-EN](http://www.mapei.com/CA-EN)
MAPEI manufactures a wide range of high performance tile and stone setting materials, many of which are specifically designed for difficult application conditions. Specifiers are urged to consult both the manufacturer's technical literature and the Tile Council of North America (TCNA) 'Handbook for Ceramic Tile Installation' for assistance in selection of products.

1. GENERAL
	1. SECTION INCLUDES
		1. Setting materials.
		2. Adhesives and primers.
		3. Grout materials.
		4. Waterproof membrane.
		5. Crack isolation membrane.
		6. Flexible sealant.
		7. Penetrating grout sealers.
		8. Penetrating tile and stone sealers.
		9. Topical stone sealer and finishes.
		10. Tile and stone maintenance, cleaners and grout haze removers.
	2. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* This section does not include any tile or stone materials; be sure that the required tile or stone materials are specified in another section. Delete sections below not relevant to this project; add others as required.

* + 1. Section 09 30 00 - Tiling.
		2. Section 09 75 00 - Stone Facing.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references below that are not actually required by the text of the edited section; add others as required.

* + 1. ANSI A108 Series/A118 Series - American National Standards for Installation of Ceramic Tile.
		2. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile.
		3. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
		4. ASTM C 150 - Standard Specification for Portland Cement.
		5. TCNA (HB) - Handbook for Ceramic Tile Installation; Tile Council of North America.
		6. ISO 13007 - International Standards Organization; classification for Grout and Adhesives.
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. [ Product Data ]: Manufacturer's technical information for each product specified.
		3. Samples: Color charts for selection of grout.
		4. Installation Instructions: Manufacturer's printed instructions for each product.
	2. QUALITY ASSURANCE
		1. Provide cleaners, sealing and maintenance products as well as tile grout, setting materials, additives, and factory-prepared dry-set mortars from the same manufacturer.
	3. DELIVERY, STORAGE AND HANDLING
		1. 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.
		2. Do not use frozen materials unless specifically allowed by manufacturer.
		3. Deliver and store materials on site at least 24 hours before work begins.
		4. Provide heated and dry storage facilities on site.
	4. PROJECT CONDITIONS

\*\* NOTE TO SPECIFIER \*\* Environmental conditions may have an effect on the final color of Portland cement grouts.

* + 1. Maintain environmental conditions and protect work during and after installation to comply with referenced standards and manufacturer's printed recommendations.
		2. Vent temporary heaters to exterior to prevent damage to tilework from carbon dioxide build-up.

\*\* NOTE TO SPECIFIER \*\* Epoxy grouts require higher temperatures for successful installation.

* + 1. 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. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: MAPEI Americas USA, which is located at : 1144 E. Newport Center Dr.; Deerfield Beach, FL 33442; Toll Free Tel: 800-42-MAPEI; Tel: 954-246-8888; Fax: 954-246-8801; Email: request info (techservicerequests@mapei.com/US-EN); Web: www.mapei.com/US-EN
		2. Acceptable Manufacturer: MAPEI Inc., which is located at : 2900 Francis-Hughes Laval, PQ, Canada H7L 3J5; Toll Free Tel: 800-361-9809; Tel: 450-662-1212; Fax: 450-662-0444; Email: request info (techservicerequests@mapei.com/CA-EN); Web: www.mapei.com/CA-EN
		3. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete paragraph above or below; coordinate with Division 1 requirements.

* + 1. Substitutions: Not permitted.

\*\* NOTE TO SPECIFIER \*\* Retain first option in "Urethane Crack Isolation Membrane and Tile-Setting Adhesive" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.1 or Credit IEQ 4.3; retain second option if required for LEED for Schools Credit IEQ 4. If retaining either option, verify that products comply.

* 1. SETTING MATERIALS
		1. Portland Cement Mortar (Thickset) Installation Materials: ANSI A108.02.
			1. Cleavage Membrane: Asphalt felt, ASTM D 226, Type I (No. 15); or polyethylene sheeting, ASTM D 4397, 4.0 mils (0.1 mm) thick.

\*\* NOTE TO SPECIFIER \*\* Retain first subparagraph below for reinforced mortar bed.

* + - 1. Reinforcing Wire Fabric: Galvanized, welded wire fabric, 2 by 2 inches (50.8 by 50.8 mm) by 0.062-inch (1.57-mm) diameter; comply with ASTM A 185 and ASTM A 82 except for minimum wire size.

\*\* NOTE TO SPECIFIER \*\* Retain first subparagraph below for portland cement plaster scratch coat. Delete if scratch coat is specified in Section 09 24 23 - Cement Stucco "Cement Plastering."

* + - 1. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C 847.
				1. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
				2. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
				3. Configuration over Studs and Furring: Flat.
				4. Configuration over Solid Surfaces: Self furring.

\*\* NOTE TO SPECIFIER \*\* Delete weight not required.

* + - * 1. Weight: 2.5 lb/sq. yd. (1.4 kg/sq. m).
				2. Weight: 3.4 lb/sq. yd. (1.8 kg/sq. m).
			1. Factory blended Polymer-Modified Thick-Bed and Render Mortar
				1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Modified Mortar Bed.

\*\* NOTE TO SPECIFIER \*\* Retain subparagraph below if latex additive is required to improve flexibility and other properties of mortar setting bed.

* + - 1. Latex Additive: Manufacturer's standard water emulsion, serving as replacement for part or all of gaging water, of type specifically recommended by latex-additive manufacturer for use with field-mixed portland cement and aggregate mortar bed.
				1. Product Subject to compliance with requirements, provide MAPEI Corporation "Planicrete AC"
		1. Dry-Set Portland Cement Mortar: ANSI A118.1 and ISO 13007; C1

\*\* NOTE TO SPECIFIER \*\* Delete product not required.

* + - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation Kerabond.
			2. Product: Subject to compliance with requirements, provide MAPEI Corporation Keraset.
			3. Product: Subject to compliance with requirements, provide MAPEI Corporation Keraflor.
		1. Dry-Set Portland Cement Mortar for Large and heavy tile: ANSI A118.1 and ISO 13007; C1T.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation Kerabond T.

\*\* NOTE TO SPECIFIER \*\* Some manufacturers produce medium-bed, dry-set mortars. Insert a paragraph in this article if required, with wording similar to that used for "Medium-Bed, Latex-Portland Cement Mortar" Paragraph.

* + 1. Modified Dry-Set Cement Mortar: ANSI A118.4 and ISO 13007; C2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex 1".
		2. Modified Dry-Set Cement Mortar: ANSI A118.4-A118.11 and ISO 13007; C2EP1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex 2".
		3. Modified Dry-Set Cement Mortar, Rapid-Setting Tile: ANSI A118.15, ANSI A118.4-A118.11 and ISO 13007; C2FP1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex RS".
		4. Modified Dry-Set Cement Mortar Rapid Setting, Full Contact (Floors only) for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2FP1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultracontact RS".
		5. Modified Dry-Set Cement Mortar, full Contact (Floors only) Tile Mortar for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2EP1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultracontact".
		6. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2TES1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "MAPEI Ultralite Mortar".
		7. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2TES1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "MAPEI Ultralite Mortar Pro".
		8. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2TES2P2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "MAPEI Ultralite S2".
		9. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2TFS1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "MAPEI Ultralite S1 Quick".
		10. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4-A118.11 and ISO 13007; C2TES1P1
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex LFT"
		11. Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile, rapid setting: ANSI A118.4-A118.11 and ISO 13007; C2FS1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex LFT Rapid".
		12. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile: ANSI A118.15-A118.11 and ISO 13007; C2ES1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ultraflex 3".
		13. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile: ANSI A118.15-A118.11 and ISO 13007; C2ES2P2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerabond T / Keralastic System".
		14. Improved Modified Dry-Set Cement Mortar: ANSI A118.15-A118.11 and ISO 13007; C2ES2P2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerabond/Keralastic System".
		15. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid Setting ANSI A118.15-A118.11 and ISO 13007; C2TFS2P2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Granirapid System".
		16. Improved Modified Dry-Set Cement Mortar for Glass Tile: ANSI A118.4-A118.11 and ISO 13007; C2TES1P1.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Adesilex P10" with "Keraply" Latex Additive.

\*\* NOTE TO SPECIFIER \*\* Retain one of first two subparagraphs below or delete both and allow Contractor to select type of mortar.
Some manufacturers recommend medium-bed mortars although ANSI A118.4 does not contain any requirements distinguishing medium-bed mortars from other latex-portland cement mortars.
Retain second option in "Water-Cleanable, Tile-Setting Epoxy" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.1 or Credit IEQ 4.3; retain third option if required for LEED for Schools Credit IEQ 4. If retaining either, verify that products comply.

* + 1. Water-Cleanable, Tile-Setting Epoxy: ANSI A118.3 and ISO R2.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerapoxy 410".

\*\* NOTE TO SPECIFIER \*\* Delete requirement not required.

* + - 1. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
			2. Product shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

\*\* NOTE TO SPECIFIER \*\* Subparagraph below is an example only. Delete if not required or revise to suit Project. Some products claim resistance of up to 350 deg F (176 deg C). See Evaluations.

* + - 1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F (60 deg C) and 212 deg F (100 deg C), respectively, and certified by manufacturer for intended use.

\*\* NOTE TO SPECIFIER \*\* Insert additional subparagraphs specifying chemical-resistance performance criteria if required. See ANSI A118.3 and ASTM C 267.
Chemical-resistant furan mortar has better heat resistance than epoxies but cannot generally be used directly over concrete. Revise first paragraph below if silica or other fillers are required.
Insert additional subparagraphs specifying chemical-resistance performance criteria if required. See ANSI A118.3 and ASTM C 267.
Type II organic adhesive is also available but is suitable only for interior ceilings and walls subject to dry, light service or limited water exposure.
Retain second option in "Organic Adhesive" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.1 or Credit IEQ 4.3; retain third option if required for LEED for Schools Credit IEQ 4. If retaining either, verify that products comply.

* + 1. Organic Adhesive: ANSI A136.1 and ISO 13007; D1TE, Type I.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Ker 909".

\*\* NOTE TO SPECIFIER \*\* Delete requirement not required.

* + - 1. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
			2. Product shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
	1. ADHESIVES AND PRIMERS

\*\* NOTE TO SPECIFIER \*\* A 'bond coat' is different from a 'mortar bond coat' as specified in TCA installation methods. This bond coat acts as a bonding agent to existing concrete, thereby increasing the adhesion of the setting or leveling mortar.

* + 1. Bond Coat: Latex cement slurry consisting of equal parts by weight of pure Portland cement and MAPEI 'Planicrete AC' latex additive.
			1. Applications: On structural concrete slab before installation of mortar bed.
			2. Applications: Where called for by TCNA installation methods specified.
			3. Applications: \_\_\_\_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* The following primer helps to strengthen plaster, gypsum wallboard and concrete surfaces prior to setting ceramic wall tiles.

* + 1. Primer: MAPEI 'Planicrete AC' multipurpose latex.

\*\* NOTE TO SPECIFIER \*\* The following primer helps to promote bond prior to setting ceramic wall tiles, interior and exterior.

* + 1. 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.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation; ECO Prim Grip.

\*\* NOTE TO SPECIFIER \*\* Wall tile adhesive can be used for interior wall and ceiling applications only, in dry or limited water exposure environments. It can be used for setting all types of glazed and unglazed tiles, over properly prepared gypsum wallboard, fully cured concrete, and cementitious backer board. Do not use for floor installations, pools, tanks, etc., or over dimensionally unstable substrates. Do not use for marble or marble agglomerates of the Verde green, Rosso Levanto or Negro Marquina types.

* + 1. Wall Tile Adhesive: Non-flammable organic adhesive, complying with ANSI A136.1 and ISO 13007 D2TE; MAPEI, "Type 1" adhesive or MAPEI, "Ultramastic ECO," or Ker 909, ISO 13007; D1TE.

\*\* NOTE TO SPECIFIER \*\* Floor and wall adhesive is suitable for interior use only, with non-vitreous, semi-vitreous, vitreous, and impervious mosaic tiles. Floor use should be for light duty residential applications only. It may be used for shower, tub, and bath surrounds where service requirements do not exceed those specified in ANSI A136.1. Do not use for pools, tanks, etc, or over dimensionally unstable substrates. Do not use for marble or marble agglomerates of the Verde green, Rosso Levanto or Negro Marquina types.

* + 1. Floor and Wall Tile Adhesive: Non-flammable organic adhesive, complying with ANSI A136.1 and ISO 13007 D2TE; MAPEI "Type 1"adhesive or MAPEI, "Ultramastic ECO," or Ker 909, ISO 13007; D1TE.
			1. Applications: Interior floor and wall tile; except areas submerged or subject to prolonged wetting.
			2. Applications: \_\_\_\_\_\_\_\_\_\_.
		2. High-Bond Adhesive: White, flexible, Trowelable, two-component adhesive, complying with ISO 13007 R2; ; MAPEI "Planicrete W".
			1. Applications: Interior and exterior floor and wall tile.
			2. Applications: Ceramic tile over steel decks, over plywood, in areas of vibration, on prefabricated bath units.
			3. Applications: \_\_\_\_\_\_\_\_\_\_.
	1. GROUT MATERIALS

\*\* NOTE TO SPECIFIER \*\* Delete all of the following materials that are not required on the project. Special applications are listed first, followed by materials that can be used in many applications for most materials. Edit the "Applications" statements to accurately reflect the purposes the materials are intended for; if more than one type of grout is required on the project, edit the "Applications" statements so that the Contractor can tell which types are to be used in which locations.

* + 1. Grout: Sanded polymer-modified Portland cement tile grout; complying with ANSI A118.6 and ISO 13007 CG2WA.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Keracolor S"

\*\* NOTE TO SPECIFIER \*\* Grout in first paragraph below is field-mixed Portland cement and fine-graded sand. Delete if only prepackaged products are acceptable or if sanded grout is not required. Sanded grout is generally used for tile installed with joint widths 1/8 inch (3.2 mm) or wider.
Grouts in first two paragraphs below are prepackaged products and are available either sanded or unsanded. Sanded grout is generally used for tile installed with joint widths 1/8 inch (3.2 mm) or wider; unsanded grout is generally used for tile installed with joint widths 1/8 inch (3.2 mm) or narrower.

* + 1. Standard Unsanded Cement Tile Grout for joints from 1/16 inch to 1/8 inch (1.5 mm to 3 mm) and meeting ANSI A118.6 and ISO 13007; CG2WA.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Keracolor U"

\*\* NOTE TO SPECIFIER \*\* Ultra/Color can be used for grouting all types of ceramic tile, ceramic mosaics, quarry tile, brick pavers, slate, porcelain and most dimensional stones, with joints between 1/8 inch (2 mm) and 1 inch (25 mm), on the interior and exterior. It is a rapid curing high early strength, low shrinkage, polymer-modified proprietary mixture of cementitious compounds, select quartz aggregates and premium color-fast pigments. Ultra/Color is mixed by adding water only and achieves ANSI A118.6 28-day strength in 72 hours under manufacturer's prescribed project conditions. Do not use for conditions requiring high chemical or acid resistance. Do not use to grout non-vitreous glazed wall tile or polished stone.

* + 1. Factory Blended, Polymer-Modified 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: Subject to compliance with requirements, provide MAPEI Corporation "Ultracolor Plus FA".
		2. Factory Blended, Polymer-Modified Tile Grout for grout joints from 1/16 inch to 1.2 inches (1.5 mm to 12 mm).
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "MAPEI Flexcolor CQ".

\*\* NOTE TO SPECIFIER \*\* Epoxy grout is used where exceptionally high strength, chemical resistance, and water resistance are required. Kerapoxy can be used for interior and exterior floor and wall installations, for ceramic tile, quarry tile, acid-resistant floor brick, paver tile, and slate. Do not use for white or translucent marble, in areas subject to heat over 212 deg F (100 deg C), or over dimensionally unstable surfaces. Do not use as a mortar.

* + 1. Premium Epoxy Mortar and Grout: ANSI A118.3 and ISO 13007; R2Tand RG[, with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D].
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerapoxy"

\*\* NOTE TO SPECIFIER \*\* Delete requirement if not required.

* + - 1. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.
		1. Commercial Grade water-Cleanable Epoxy Grout: ANSI A118.3 and ISO 13007; RG.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerapoxy IEG"

\*\* NOTE TO SPECIFIER \*\* Delete requirement if not required.

* + - 1. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.

\*\* NOTE TO SPECIFIER \*\* Subparagraph below is an example only. Some products claim resistance of up to 350 deg F (176 deg C). Revise to suit Project. See Evaluations.

* + - 1. Provide product capable of withstanding continuous and intermittent exposure to temperatures of up to 140 deg F (60 deg C) and 212 deg F (100 deg C), respectively, and certified by manufacturer for intended use.
		1. Premium Epoxy Mortar and Grout: ANSI A118.3 and ISO 13007; R2Tand RG
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation "Kerapoxy CQ"

\*\* NOTE TO SPECIFIER \*\* Delete requirement if not required.

* + - 1. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D.
	1. WATERPROOF MEMBRANE

\*\* NOTE TO SPECIFIER \*\* ANSI A118.10 specifies waterproof membranes for use under thin-set tile installations.

* + 1. General: Manufacturer's standard product that complies with ANSI A118.10 and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation materials.
		2. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or elastomeric polymer and continuous fabric reinforcement.

\*\* NOTE TO SPECIFIER \*\* Delete product not required

* + - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation, Mapelastic 400.
			2. Product: Subject to compliance with requirements, provide MAPEI Corporation, Mapelastic HPG.
		1. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation, Mapelastic AquaDefense.
		2. Latex-Portland Cement: Flexible mortar consisting of cement-based mix and latex additive.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic 315.

\*\* NOTE TO SPECIFIER \*\* Retain first option in "Urethane Waterproofing and Tile-Setting Adhesive" Paragraph below if required for LEED-NC, LEED-CI, or LEED-CS Credit IEQ 4.1 or Credit IEQ 4.3; retain second option if required for LEED for Schools Credit IEQ 4. If retaining either option, verify that products comply.

* 1. CRACK ISOLATION MEMBRANE

\*\* NOTE TO SPECIFIER \*\* ANSI A118.12 is a new standard. Verify that products listed in this article comply with the standard.

* + 1. General: Manufacturer's standard product that complies with ANSI A118.12 for performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.
			1. Product: Subject to compliance with requirements, provide products from MAPEI Corporation.

\*\* NOTE TO SPECIFIER \*\* Delete performance not required.

* + - 1. Performance: Standard performance per standard.
			2. Performance: High performance per standard.
		1. Fabric-Reinforced, Modified-Bituminous Sheet: Self-adhering, modified-bituminous sheet with fabric reinforcement facing; 0.040-inch (1.01-mm) nominal thickness.
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic, Mapeguard 2.
				1. Requires Primer; MAPEI SM Primer.
		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.

\*\* NOTE TO SPECIFIER \*\* Delete product not required.

* + - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic 400 with Fiberglass Mesh.
			2. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic HPG with MAPEI Fiberglass Mesh.
		1. 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.

\*\* NOTE TO SPECIFIER \*\* Delete product not required.

* + - 1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapelastic CI.
		1. Crack Isolation and Sound Control; Flexible, thin, load-bearing, fabric reinforced, 'peel-and-stick' crack-isolation and sound-reduction membrane that requires primer complying with ANSI A118.12:
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation; Mapesonic 2.
				1. Requires Primer; MAPEI SM Primer
	1. UNDERLAYMENT MEMBRANE
		1. Premium-performance, lightweight, waterproofing and vapor pressure-equalizing underlayment membrane that provides crack suppression for use under ceramic tile and stone installations, for both residential and commercial applications. It is designed to perform over challenging substrates, such as young concrete and single-layer 3/4" (19 mm) plywood subfloors with joist spacing of up to 19.2" (49 cm) on center and absorbs lateral stress from the substrate without transferring this force to the tile or stone, which maintains exceptional bonds, and complying with ANSI A118.10, MAPEI Mapeguard UM.
			1. Seaming Tape, cover seams and wall upturns to provide waterproofing and vapor management protection when installing underlayment membrane MAPEI Mapeguard UM for ceramic tile and stone, MAPEI, Mapeguard ST
	2. FLEXIBLE SEALANT
		1. Professional-grade, 100%-silicone sealant specifically formulated for heavy traffic expansion and movement joints, horizontal and vertical complying with ASTM standards; slump (ASTM C639), tack-free time (ASTM C679,) shore "A" hardness (ASTM C661), joint movement (ASTM C920), elongation at break (ASTM D412), flexibility (ASTM C734) and passes weatherabilty (Accelerated Weathering Tester QUV).
			1. Product: Subject to compliance with requirements, provide MAPEI Corporation, Mapesil T.
	3. PENETRATING GROUT SEALERS

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + 1. Water-based penetrating sealer that provides protection against staining for use with sanded and non-sanded cementitious grout joints and can also be used as a pre-grouting sealer; MAPEI, "UltraCare Grout Sealer."
		2. Water-based sealer; natural-look, that protects interior and exterior natural stone (marble, limestone, sandstone, slate, granite, travertine, etc.), unglazed ceramic tile, masonry and cement grout. Containing no silicones. Can also be used as a pre-grouting sealer; MAPEI, "UltraCare Penetrating Stone, Tile & Grout Sealer."
		3. Water-based penetrating sealer; premium, natural-look, that provides maximum protection for interior and exterior natural stone (marble, limestone, sandstone, slate, granite, travertine, etc.), unglazed ceramic tile, masonry. Can also be used as a pre-grouting sealer; MAPEI, "UltraCare Penetrating Plus Stone, Tile & Grout Sealer."
	1. PENETRATING TILE AND STONE SEALERS

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + 1. Solvent-based penetrating sealer; premium, natural-look, that uses VOC-exempt materials and will provide maximum protection on interior and exterior natural stone (marble, limestone, sandstone, slate, granite, travertine, etc.), unglazed and porcelain ceramic tile, masonry and grout. Can be used as a pre-grouting sealer (grout-release); MAPEI, "UltraCare Penetrating Plus SB Stone & Porcelain Tile Sealer".
		2. Economical color-enhancing penetrating sealer that enhances the natural colors of stone and provides protection on all interior and exterior natural stone surfaces such as, marble, limestone, sandstone, slate, granite, travertine, as well as cementitious grout. Can be used as a pre-grouting sealer (grout-release); MAPEI, "UltraCare Enhancing Stone Sealer".
		3. Premium color-enhancing penetrating sealer that enhances the natural colors of stone and provides maximum protection. Safe for use on all interior and exterior natural stone surfaces, such as marble, limestone, sandstone, slate, granite, travertine as well as cementitious grout. The product can also be used as a pre-grouting sealer; MAPEI, "UltraCare Enhancing Plus Stone Sealer."
	1. TOPICAL STONE SEALER AND FlNlSHES

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + 1. High-Sheen, one-step, non-yellowing, resistant to ultraviolet light, water-based formula that provides a durable high-gloss finish and maximum stain resistance for interior uses, and can also be used as a pre-grouting sealer (grout release).; MAPEI, "UltraCare High-Gloss Sealer & Finish"
		2. Low-Sheen, one-step, non-yellowing, water-based formula that provides a durable low-sheen satin finish and maximum stain resistance. This product can also be used as a pre-grouting sealer. For interior and exterior use, is non-yellowing and resistant to ultraviolet light; MAPEI, "UltraCare Low-Sheen Sealer & Finish."
	1. TILE AND STONE MAINTENANCE, CLEANERS AND GROUT HAZE REMOVERS

\*\* NOTE TO SPECIFIER \*\* Delete types not required.

* + 1. High-performance, stone & grout cleaner and deodorizer. Non-acidic, safe to use on natural stone, grout and tile; MAPEI, "UltraCare Everyday Stone, Tile & Grout Cleaner."
		2. Stone and Grout Cleaner and Resealer for kitchens, bathrooms and countertops that boosts the performance of any existing penetrating sealers while cleaning and deodorizing.. Non-acidic and safe to use on natural stone, grout and tile; MAPEI, "UltraCare Everyday Stone & Grout Cleaner & Resealer."
		3. Stone cleaner and polish for kitchen and bathroom countertops, and is non-acidic; MAPEI, "UltraCare Everyday Stone Clean & Polish."
		4. Neutral cleaner; highly concentrated, zero-VOC, for ceramic, porcelain and natural stone surfaces and prevent soap scum buildup and hard water deposits; MAPEI, "UltraCare Concentrated Tile & Grout Cleaner."
		5. 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; MAPEI, UltraCare Heavy-Duty Stone, Tile & Grout Cleaner.
		6. Abrasive cleaner; water based, biodegradable, nontoxic, nonflammable and contains no VOC's or acids. Does not require letting the product stand or dwell on the surface for effective cleaning, safe for use on ceramic, porcelain and natural stone surfaces, light cementitious and epoxy grout residue. Excellent for use on heavily textured and hard to clean surfaces; MAPEI, UltraCare Abrasive Surface Cleaner.
		7. Stain remover for stone; absorbs food, grease and oil stains out of natural-stone surfaces including granite, marble, limestone, slate, travertine, terra cotta, flagstone, concrete and cement grout; MAPEI, UltraCare Deep Stain Remover for Stone.
		8. Efflorescence remover; professional-strength, acid based formulation that effectively removes efflorescence from cementitious grout, ceramic and porcelain tile, concrete, brick and stone surfaces and helps to limit its reoccurrence; MAPEI, "UltraCare Efflorescence Remover."
		9. Epoxy grout haze remover; professional-strength formulation that removes tough epoxy grout haze from tile and stone surfaces, low-odor, non-flammable and easy to use, water-based; MAPEI, "UltraCare Epoxy Grout Haze Remover."
		10. Cement Grout Haze remover; professional-strength formulate removes cement grout haze from tile, concrete and stone surfaces. Non-acidic, low-odor, non-flammable, water based ; MAPEI, "UltraCare Cement Grout Haze Remover."
		11. Heavy-Duty, water based, sealer and coating stripper; professional-strength for removal of coatings, lacquers, varnishes, sealers, paints and epoxy grout haze from tile and stone surfaces; MAPEI, "UltraCare Heavy-Duty Sealer & Coating Stripper."
		12. Cementitious grout pre-cleaner; ready-to-use cleaner formulated to prepare grout joints before application of grout colorant and sealant. Removes grease, dirt, soil, soap scum and hard water deposits from grout joints to ensure a superior bond for UltraCare Grout Refresh. This product should not be used on epoxy grout joints; MAPEI, "UltraCare Grout Refresh Pre-Cleaner."
	1. MIXES
		1. Proportion and mix materials in accordance with manufacturer's most current written instructions and applicable ANSI standards.
1. EXECUTION
	1. EXAMINATION

\*\* NOTE TO SPECIFIER \*\* MAPEI has extensive surface preparation recommendations. Consult their Architectural Catalog for details.

* + 1. Examine surfaces to receive tilework and conditions under which tile will be installed.
		2. Do not proceed with tilework until surfaces and conditions comply with requirements indicated in reference tile installation standard and manufacturer's printed instructions.
	1. INSTALLATION
		1. Install tile in accordance with manufacturer's printed instructions and the applicable requirements of ANSI A108 Series for the materials being used.

\*\* NOTE TO SPECIFIER \*\* For ease of specifying installation methods refer to the Tile Council of America (TCA) "Handbook for Ceramic Tile Installation" for time-proven methods. Include the TCA method numbers either on the drawing details or list them in the specification, with a description of where each is to be used. Delete the following paragraph if TCA methods are not to be indicated on the drawings.

* + 1. Install tile using TCNA methods specified on the drawings.

\*\* NOTE TO SPECIFIER \*\* The following paragraphs are examples of how to specify different TCA methods for different applications. Delete if TCA methods are shown on the drawings.

* + 1. Floor Tile at \_\_\_\_: Install in accordance with TCNA method \_\_\_\_\_.
		2. Wall Tile at \_\_\_\_\_: Install in accordance with TCNA method \_\_\_\_\_.
		3. Tile on Soffits at \_\_\_\_\_: Install in accordance with TCNA method C311.
		4. Tile Countertops: Install in accordance with TCNA method \_\_\_\_\_.
		5. Tile in Refrigerated Rooms: Install in accordance with TCNA method SR612.
		6. Tile in Steam Rooms: Install in accordance with TCNA method SR613.
		7. Tile on Stairs: Install in accordance with TCNA method S151.
		8. Install expansion and control joints in accordance with TCNA method EJ171.
		9. Apply tile and grout cleaners, sealers and maintenance products in accordance with manufacturer's printed instructions and technical data sheets.
	1. GROUTING
		1. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.
		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.
	2. PROTECTION

\*\* NOTE TO SPECIFIER \*\* The following are general recommendations for protection during construction. Specific applications and products may allow tiled areas to be occupied sooner.

* + 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.
		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.

\*\* NOTE TO SPECIFIER \*\* When dealing with cement-based products, it should be noted that temperature and humidity during and after installation of tile affect final curing time. That is, low temperatures -- 60 deg F (15 deg C) and under -- and high humidity -- 70 percent and above -- will delay final cure time.

* + 1. Protect from freezing and total water immersion for at least 21 days after installation.

END OF SECTION