



SECTION 09 30 00
TILE AND STONE SETTING MATERIALS AND ACCESSORIES

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Setting materials.
- B. Adhesives and primers.
- C. Grout materials.
- D. Self-Leveling Underlayment
- E. Waterproof membrane.
- F. Flexible sealant.
- G. Uncoupling Membrane
- H. Sound Reduction Membrane
- I. Penetrating tile and stone sealers.
- J. Topical stone sealer and finishes.
- K. Tile and stone maintenance, cleaners and grout haze removers.

1.2 RELATED SECTIONS

- A. Section 03 30 00 Cast-in-Place Concrete.
- B. Section 03 38 00 Post-Tensioned Concrete.
- C. Section 03 54 16 Hydraulic Cement Underlayment
- D. Section 04 20 00 Unit Masonry (CMU wall substrates).
- E. Section 05 40 00 Cold-Formed Metal Framing
- F. Section 05 42 00 Cold-Formed Metal Joist Framing.
- G. Section 06 11 00 Wood Framing.
- H. Section 06 11 50 Sheathing.
- I. Section 07 14 00 Fluid-Applied Waterproofing

- J. Section 07 60 00 Flashing and Sheet Metal
- K. Section 07 92 13 Elastomeric Joint Sealants
- L. Section 07 92 19 Acoustic Sealants.
- M. Section 09 20 00 Plaster and Gypsum Board.
- N. Section 09 21 00 Metal Framing For Plaster and Gypsum Board Assemblies.
- O. Section 09 22 16 Non-Structural Metal Framing.
- P. Section 09 26 00 Veneer Plastering.
- Q. Section 09 28 00 Backing Boards and Underlayments.
- R. Section 09 29 00 Gypsum Board.
- S. Section 09 30 00 Tiling.
- T. Section 09 30 33 Stone Tiling.
- U. Section 09 34 00 Waterproof-Membrane Tiling.
- V. Section 09 31 33 Thin Set Stone Tiling.
- W. Section 09 75 00 Stone Facing

1.3 REFERENCES

- A. ANSI A108 Series/A118 Series – American National Standards for Installation of Ceramic Tile.
- B. ANSI A 108.19 – American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs.
- C. ANSI A136.1 – American National Standard for Organic Adhesives for Installation of Ceramic Tile.
- D. ANSI A137. 1 – American National Standard for Ceramic Tile.
- E. ANSI A138.1 – American National Standard Specifications for Green Squared Certification for Tiles and Installation Materials.
- F. ASTM International (ASTM):
 1. ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 2. ASTM C 144 – Standard Specification for Aggregate for Masonry Mortar. (Jobsite Mix)
 3. ASTM C 150 – Standard Specification for Portland Cement. (Jobsite Mix)
 4. ASTM C 109/C 109M – Standard Test Method for Compressive Strength of Hydraulic Cement Mortars. (Using 2-inch [50-mm] Cube Specimens).
 5. ASTM C616 – Standard Specification for Quartz-Based Dimension Stone.
 6. ASTM C645 – Standard Specification for Nonstructural Steel Framing Members.
- G. NSI (DSDM) – Dimension Stone Design Manual; Natural Stone Institute.
- H. TCNA (HB) – Handbook for Ceramic Tile, Glass, and Stone Installation; Tile Council of North America.

- I. ISO 13007 – International Standards Organization; classification for Grout and Adhesives.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical information for each product specified.
- B. Shop Drawings: Indicate stone tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- C. Samples: Color charts for selection of grout.
- D. Installation Instructions: Manufacturer's printed instructions for each product.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and maintenance coatings.

1.5 QUALITY ASSURANCE

- A. To ensure warranty requirements and compatibility of products: please provide cleaners, sealing and maintenance products as well as tile grout, setting materials, underlayments, additives, accessories and factory-prepared dry-set mortars from the same manufacturer.
- B. Installer Qualifications:
 - 1. Company with minimum of five (5) years documented experience with installations of similar scope, materials and design of this section
 - 2. 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 five (5) years experience.
 - 3. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
 - 4. Installer's supervisor for the project holds the International Masonry Institute's Foreman Certification.
 - 5. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.
- C. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.6 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. Stone tile and installation material compatibility.
 - 2. Grouting procedure.
 - 3. Maintenance and cleaning products and methods.
 - 4. Surface Preparation.

1.7 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 or other causes.

- B. Protect setting materials from freezing or 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 or 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.

1.8 ENVIRONMENTAL REQUIREMENTS

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Setting Material Manufacturer: MAPEI Corporation, 1144 E. Newport Center Drive, Deerfield Beach, FL 33442, USA. Toll-Free Tel.: 1-800-992-6273. Fax: 954-246-8805. Email: TechServiceRequests@mapei.com. Web: www.mapei.us.
- B. Acceptable Stone Importer: Anoma, 14100 Kingsley Drive, Gardena, CA 90249.
- C. Requests for substitutions will not be considered.
- D. Substitutions: Not permitted.

2.2 MORTAR MATERIALS

- A. 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.
 - 2. 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.
 - 3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C 847.
 - a. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
 - b. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
 - c. Configuration over Studs and Furring: Flat.
 - d. Configuration over Solid Surfaces: Self furring.
 - e. Weight: 2.5 lbs./sq. yd. (1.4 kg/sq. m).
 - f. Weight: 3.4 lbs./sq. yd. (1.8 kg/sq. m).

4. Factory blended Polymer-Modified Thick-Bed and Render Mortar
 - a. Product: Subject to compliance with requirements, provide MAPEI, Modified Mortar Bed.
 5. 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.
 - a. Product Subject to compliance with requirements, provide MAPEI, Planicrete AC.
- B. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4TE, A118.11, A118.15TE and ISO 13007 C2TES1P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, MAPEI Ultralite Mortar.
 - C. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4E, A118.11, A118.15E and ISO 13007 C2TES2P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, MAPEI Ultralite S2.
 - D. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4TE, A118.11, A118.15TE and ISO 13007 C2TES1P1
 1. Product: Subject to compliance with requirements, provide MAPEI, Ultraflex LFT
 - E. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile, rapid setting: ANSI A118.4TF, A118.11, A118.15TF and ISO 13007 C2FS1P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, Ultraflex LFT Rapid.
 - F. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile: ANSI A118.4E, A118.11, A118.15E and ISO 13007 C2ES2P2.
 1. Product: Subject to compliance with requirements, provide MAPEI, Kerabond T and Keralastic System.
 - G. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid Setting ANSI A118.4F, A118.11, A118.15F and ISO 13007 C2TFS2P2.
 1. Product: Subject to compliance with requirements, provide MAPEI, Granirapid System.
 - H. Organic Adhesive: ANSI A136.1 and ISO 13007 D1TE
 1. Product: Subject to compliance with requirements, provide MAPEI, Type 1.
 2. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 3. 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."

2.3 ADHESIVES AND PRIMERS

- A. 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, ECO Prim Grip.
- B. Adhesive Bond Coat for Sound Reduction Membrane: Light tan, nonflammable and CRI (Green Label Plus certified) adhesive;
 1. Product: Subject to compliance with requirements, provide MAPEI, Ultrabond ECO 420.
 2. Applications: Interior floors for the installation of recycled rubber sound reduction

membrane.

2.4 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: Subject to compliance with requirements, provide MAPEI, Ultracolor Plus FA.
- B. Polymer Ready-to-Use 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, Flexcolor CQ.

2.5 WATERPROOF MEMBRANE

- A. 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 materials.
- B. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
 - 1. Product: Subject to compliance with requirements, provide MAPEI, Mapelastic AquaDefense.
- C. Latex-Portland Cement: Flexible mortar consisting of cement-based mix and latex additive.
 - 1. Product: Subject to compliance with requirements, provide MAPEI, "Mapelastic 315".

2.6 FLEXIBLE SEALANT

- A. 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 weatherability (Accelerated Weathering Tester QUV).
 - 1. Product: Subject to compliance with requirements, provide MAPEI, Mapesil T.
 - 2. Product: Subject to compliance with requirements, provide MAPEI, Mapesil 3D.

2.7 SOUND REDUCTION MEMBRANE

- A. Sound Control and Crack Isolation; Flexible, thin, load-bearing, recycled rubber sound-reduction and crack isolation membrane complying with ANSI A118.12:
 - 1. Product: Subject to compliance with requirements, provide MAPEI, Mapesonic RM.
 - a. Mapesonic RM 5: 5mm thickness for sound reduction.
 - b. Mapesonic RM 10: 10mm thickness for improved sound reduction.

2.8 PENETRATING TILE AND STONE SEALERS

- A. 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.
- B. 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.

- C. 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.

2.9 TOPICAL STONE SEALER AND FINISHES

- A. 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.
- B. 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 Stone Sealer & Finish.

2.10 TILE AND STONE MAINTENANCE, CLEANERS AND GROUT HAZE REMOVERS

- A. Stone cleaner and polish for kitchen and bathroom countertops, and is non-acidic; MAPEI, UltraCare Everyday Stone Clean & Polish.
- 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; MAPEI, UltraCare Heavy-Duty Stone, Tile & Grout Cleaner.
- C. 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.

2.11 MIXES

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

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive tilework and conditions under which tile will be installed.
- 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. 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.

3.2 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. Install stone tile using TCNA methods and NSI guidelines.
- C. Install expansion and control joints in accordance with TCNA method EJ171.

- D. Apply stone tile and grout cleaners, sealers and maintenance products in accordance with manufacturer's printed instructions and technical data sheets.

3.3 GROUTING

- A. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.
- B. Remove standing water, dust, and foreign substances from joints to be grouted.
- C. Clean and dry stone tile surfaces.
- D. Due to the irregular joints, bag grout into the joints or apply sealant
- E. After grouting, remove all grout residue promptly.

3.4 PROTECTION

- A. 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.
- B. Protect from weather which can cause staining for at least 14 days.
- C. Protect from freezing and total water immersion for at least 21 days after installation.

END OF SECTION



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PART 1 GENERAL

1.1 SECTION INCLUDES

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- B. Adhesives and primers.
- C. Grout materials.
- D. Self-Leveling Underlayment
- E. Waterproof membrane.
- F. Flexible sealant.
- G. Uncoupling Membrane
- H. Sound Reduction Membrane
- I. Penetrating tile and stone sealers.
- J. Topical stone sealer and finishes.
- K. Tile and stone maintenance, cleaners and grout haze removers.

1.2 RELATED SECTIONS

- A. Section 03 30 00 Cast-in-Place Concrete.
- B. Section 03 38 00 Post-Tensioned Concrete.
- C. Section 03 54 16 Hydraulic Cement Underlayment
- D. Section 04 20 00 Unit Masonry (CMU wall substrates).
- E. Section 05 40 00 Cold-Formed Metal Framing
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- R. Section 09 29 00 Gypsum Board.
- S. Section 09 30 00 Tiling.
- T. Section 09 30 33 Stone Tiling.
- U. Section 09 34 00 Waterproof-Membrane Tiling.
- V. Section 09 31 33 Thin Set Stone Tiling.
- W. Section 09 75 00 Stone Facing

1.3 REFERENCES

- A. ANSI A108 Series/A118 Series – American National Standards for Installation of Ceramic Tile.
- B. ANSI A 108.19 – American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs.
- C. ANSI A136.1 – American National Standard for Organic Adhesives for Installation of Ceramic Tile.
- D. ANSI A137. 1 – American National Standard for Ceramic Tile.
- E. ANSI A138.1 – American National Standard Specifications for Green Squared Certification for Tiles and Installation Materials.
- F. ASTM International (ASTM):
 1. ASTM A1064 – Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete.
 2. ASTM C 144 – Standard Specification for Aggregate for Masonry Mortar. (Jobsite Mix)
 3. ASTM C 150 – Standard Specification for Portland Cement. (Jobsite Mix)
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- G. NSI (DSDM) – Dimension Stone Design Manual; Natural Stone Institute.
- H. TCNA (HB) – Handbook for Ceramic Tile, Glass, and Stone Installation; Tile Council of North America.

- I. ISO 13007 – International Standards Organization; classification for Grout and Adhesives.

1.4 SUBMITTALS

- A. Product Data: Manufacturer's technical information for each product specified.
- B. Shop Drawings: Indicate stone tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- C. Samples: Color charts for selection of grout.
- D. Installation Instructions: Manufacturer's printed instructions for each product.
- E. Maintenance Data: Include recommended cleaning methods, cleaning materials, and maintenance coatings.

1.5 QUALITY ASSURANCE

- A. To ensure warranty requirements and compatibility of products: please provide cleaners, sealing and maintenance products as well as tile grout, setting materials, underlayments, additives, accessories and factory-prepared dry-set mortars from the same manufacturer.
- B. Installer Qualifications:
 - 1. Company with minimum of five (5) years documented experience with installations of similar scope, materials and design of this section
 - 2. 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 five (5) years experience.
 - 3. Installer is a Five-Star member of the National Tile Contractors Association or a Trowel of Excellence member of the Tile Contractors' Association of America.
 - 4. Installer's supervisor for the project holds the International Masonry Institute's Foreman Certification.
 - 5. Installer employs Ceramic Tile Education Foundation Certified Installers or installers recognized by the U.S. Department of Labor as Journeyman Tile Layers.
- C. Single Source Responsibility: Obtain each type and color of tile from a single source. Obtain each type and color of mortar, adhesive and grout from the same source.

1.6 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. Stone tile and installation material compatibility.
 - 2. Grouting procedure.
 - 3. Maintenance and cleaning products and methods.
 - 4. Surface Preparation.

1.7 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 or other causes.

- B. Protect setting materials from freezing or 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 or 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.

1.8 ENVIRONMENTAL REQUIREMENTS

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

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Setting Material Manufacturer: MAPEI Corporation, 1144 E. Newport Center Drive, Deerfield Beach, FL 33442, USA. Toll-Free Tel.: 1-800-992-6273. Fax: 954-246-8805. Email: TechServiceRequests@mapei.com. Web: www.mapei.us.
- B. Acceptable Stone Importer: Anoma, 14100 Kingsley Drive, Gardena, CA 90249.
- C. Requests for substitutions will not be considered.
- D. Substitutions: Not permitted.

2.2 MORTAR MATERIALS

- A. 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.
 - 2. 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.
 - 3. Expanded Metal Lath: Diamond-mesh lath complying with ASTM C 847.
 - a. Base Metal and Finish for Interior Applications: Uncoated or zinc-coated (galvanized) steel sheet, with uncoated steel sheet painted after fabrication into lath.
 - b. Base Metal and Finish for Exterior Applications: Zinc-coated (galvanized) steel sheet.
 - c. Configuration over Studs and Furring: Flat.
 - d. Configuration over Solid Surfaces: Self furring.
 - e. Weight: 2.5 lbs./sq. yd. (1.4 kg/sq. m).
 - f. Weight: 3.4 lbs./sq. yd. (1.8 kg/sq. m).

4. Factory blended Polymer-Modified Thick-Bed and Render Mortar
 - a. Product: Subject to compliance with requirements, provide MAPEI, **Modified Mortar Bed.**
 5. 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.
 - a. Product Subject to compliance with requirements, provide MAPEI, **Planicrete AC.**
- B. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4TE, A118.11, A118.15TE and ISO 13007 C2TES1P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, **MAPEI Ultralite Mortar.**
 - C. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4E, A118.11, A118.15E and ISO 13007 C2TES2P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, **MAPEI Ultralite S2.**
 - D. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile: ANSI A118.4TE, A118.11, A118.15TE and ISO 13007 C2TES1P1
 1. Product: Subject to compliance with requirements, provide MAPEI, **Ultraflex LFT**
 - E. Improved Modified Dry-Set Cement Mortar, Lightweight, Non-Sag, for Large and Heavy Tile, rapid setting: ANSI A118.4TF, A118.11, A118.15TF and ISO 13007 C2FS1P1.
 1. Product: Subject to compliance with requirements, provide MAPEI, **Ultraflex LFT Rapid.**
 - F. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile: ANSI A118.4E, A118.11, A118.15E and ISO 13007 C2ES2P2.
 1. Product: Subject to compliance with requirements, provide MAPEI, **Kerabond T and Keralastic System.**
 - G. Improved Modified Dry-Set Cement Mortar for Large and Heavy Tile, Rapid Setting ANSI A118.4F, A118.11, A118.15F and ISO 13007 C2TFS2P2.
 1. Product: Subject to compliance with requirements, provide MAPEI, **Granirapid System.**
 - H. Organic Adhesive: ANSI A136.1 and ISO 13007 D1TE
 1. Product: Subject to compliance with requirements, provide MAPEI, Type 1.
 2. Provide product with a VOC content of 65 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 3. 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."

2.3 ADHESIVES AND PRIMERS

- A. 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, **ECO Prim Grip.**
- B. Adhesive Bond Coat for Sound Reduction Membrane: Light tan, nonflammable and CRI (Green Label Plus certified) adhesive;
 1. Product: Subject to compliance with requirements, provide MAPEI, **Ultrabond ECO 420.**
 2. Applications: Interior floors for the installation of recycled rubber sound reduction

membrane.

2.4 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: Subject to compliance with requirements, provide MAPEI, **Ultracolor Plus FA**.
- B. Polymer Ready-to-Use 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, **Flexcolor CQ**.

2.5 WATERPROOF MEMBRANE

- A. 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 materials.
- B. Fluid-Applied Membrane: Liquid-latex rubber or elastomeric polymer.
 - 1. Product: Subject to compliance with requirements, provide MAPEI, **Mapelastic AquaDefense**.
- C. Latex-Portland Cement: Flexible mortar consisting of cement-based mix and latex additive.
 - 1. Product: Subject to compliance with requirements, provide MAPEI, **"Mapelastic 315"**.

2.6 FLEXIBLE SEALANT

- A. 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 weatherability (Accelerated Weathering Tester QUV).
 - 1. Product: Subject to compliance with requirements, provide MAPEI, **Mapesil T**.
 - 2. Product: Subject to compliance with requirements, provide MAPEI, **Mapesil 3D**.

2.7 SOUND REDUCTION MEMBRANE

- A. Sound Control and Crack Isolation; Flexible, thin, load-bearing, recycled rubber sound-reduction and crack isolation membrane complying with ANSI A118.12:
 - 1. Product: Subject to compliance with requirements, provide MAPEI, **Mapesonic RM**.
 - a. **Mapesonic RM 5**: 5mm thickness for sound reduction.
 - b. **Mapesonic RM 10**: 10mm thickness for improved sound reduction.

2.8 PENETRATING TILE AND STONE SEALERS

- A. 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**.
- B. 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**.

- C. 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](#).

2.9 TOPICAL STONE SEALER AND FINISHES

- A. 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](#).
- B. 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 Stone Sealer & Finish](#).

2.10 TILE AND STONE MAINTENANCE, CLEANERS AND GROUT HAZE REMOVERS

- A. Stone cleaner and polish for kitchen and bathroom countertops, and is non-acidic; MAPEI, [UltraCare Everyday Stone Clean & Polish](#).
- 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; MAPEI, [UltraCare Heavy-Duty Stone, Tile & Grout Cleaner](#).
- C. 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](#).

2.11 MIXES

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

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to receive tilework and conditions under which tile will be installed.
- 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. 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.

3.2 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. Install stone tile using TCNA methods and NSI guidelines.
- C. Install expansion and control joints in accordance with TCNA method EJ171.

- D. Apply stone tile and grout cleaners, sealers and maintenance products in accordance with manufacturer's printed instructions and technical data sheets.

3.3 GROUTING

- A. Grout joints in accordance with manufacturer's instructions and ANSI A108.10.
- B. Remove standing water, dust, and foreign substances from joints to be grouted.
- C. Clean and dry stone tile surfaces.
- D. Due to the irregular joints, bag grout into the joints or apply sealant
- E. After grouting, remove all grout residue promptly.

3.4 PROTECTION

- A. 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.
- B. Protect from weather which can cause staining for at least 14 days.
- C. Protect from freezing and total water immersion for at least 21 days after installation.

END OF SECTION