**SECTION 09 30 00 - TILE SETTING MATERIALS AND ACCESSORIES**

SYSTEM OVERVIEW

*This section is based on products from Merkrete a division of Parex USA, 4125 E. La Palma Ave. Suite 250, Anaheim, CA. 92807, (800) 851-6303. Merkrete offers a complete line of products for waterproofing, setting and grouting ceramic tile and dimension stone, including latex-Portland cement mortars and grouts, epoxy mortars and grouts, joint and skim coat material for cementitious backer units, leveling material for concrete, and a waterproof membrane for tile applications. This specification is available at* [*www.merkrete.com*](http://www.merkrete.com/) *in Word format, for your electronic editing.*

**PART 1 - GENERAL**

**1.1 SECTION INCLUDES**

A. Setting materials, grouting materials and methods of installation for ceramic tile and dimension stone.

**1.2 RELATED SECTIONS**

EDITOR NOTE: DELETE ANY SECTIONS BELOW NOT RELEVANT TO THIS PROJECT; ADD OTHERS AS REQUIRED.

A. Section 03 30 00 - Cast-In-Place Concrete.

B. Section 04 20 00 - Unit Masonry.

C. Section 05 40 00 - Cold-Formed Metal Framing.

D. Section 06 11 50 - Sheathing.

E. Section 09 26 00 - Gypsum Board Systems.

F. Section 09 30 00 - Tile

G. Section 09 31 33 – Thin Set Stone Tile

**1.3 REFERENCES**

A. ANSI A108 - American National Standard Specifications for Installation of Ceramic Tile.

B. ANSI A108.01 General Requirements: Subsurfaces and Preparations by Other Trades.

C. ANSI A108.02 General Requirements: Materials, Environmental, and Workmanship.

D. ANSI A108.1A Installation of Ceramic Tile in the Wet Set Method with Portland Cement Mortar.

E. ANSI A108.1B Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland cement Mortar.

F. ANSI A108.5 Installation of Ceramic Tile with Dry-Set Portland cement Mortar or Latex-Portland Cement Mortar.

G. ANSI A108.6 Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy.

H. ANSI A108.10 Installation of Grout in Tilework.

I. ANSI A108.11 Specifications for the Installation of Interior Cementitious Backer Units.

J. ANSI A108.13 Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone.

K. ANSI A108.14 Installation of Paper-Faced Glass Mosaic Tile.

L. ANSI A108.15 Alternate Method: Installation of Paper-Faced Glass Mosaic Tile.

M. ANSI A108.16 Installation of Paper-Faced, Back-Mounted, Edge Mounted, or Clear Film Face-Mounted Glass Mosaic Tile.

N. ANSI A108.17 Installation of Crack Isolation Membranes.

O. ANSI A118.1 Specifications for Dry-Set Portland Cement Mortar.

P. ANSI A118.3 Specifications for Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy.

Q. ANSI A118.4 Specifications for Latex-Portland Cement Mortar.

R. ANSI A118.6 Specifications for Ceramic Tile Grouts.

S. ANSI A108.7 Specifications for Polymer Modified Ceramic Tile Grouts.

T. ANSI A118.9 Specifications for Test Methods and Specifications for Cementitious Backer Units.

U. ANSI A118.10 Specifications for Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile And Dimension Stone Installations.

V. ANSI A118.12 Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations.

W ANSI A118.13 Specification for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation.

X. TCNA 2012 "Handbook for Ceramic Tile Installation"; Tile Council of America Method #\_\_\_\_\_\_\_\_.

Y. U.S. Product Standard PS-l for Construction and Industrial Plywood.

**1.4 SUBMITTALS**

A. Submit under provisions of Section 01300.

B. Product Data for Membranes, Mortars, Grouts, and Adhesives:

1. Submit manufacturer's product data demonstrating compliance with specified requirements.

2. Submit manufacturer's instructions for use.

3. Submit manufacturer's certification that materials are suitable for intended use.

C. Samples: Submit samples of each type and color of grouting material and tile.

D. Tile Certificates:

1. Submit Master Grade Certificates issued and signed by the manufacturer and the Contractor when the tile is shipped. State grade, kind of tile, and identification marks for tile packages.

2. Submit Certification from tile manufacturer of satisfactory performance of frost proof tile.

**1.5 QUALITY ASSURANCE**

A. Mock-ups: Provide mock-up panel using materials specified for final work. Construct mock-up as directed, and of full thickness. Obtain Architect's acceptance of visual qualities of the sample panel.

B Installer Qualifications: 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.

C Source Limitations for Tile: Obtain each color, grade, finish, type, composition, and variety of tile from one source with resources to provide products from the same production run for each contiguous area of consistent quality in appearance and physical properties without delaying the Work.

D. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality for each mortar, adhesive, and grout component from a single manufacturer and each aggregate from one source or producer.

E. Source Limitations for Other Products: Obtain each of the following products specified in this Section from one source and by a single manufacturer for each product.

**1.6 DELIVERY, STORAGE AND HANDLING**

A. Provide heated and dry storage facilities on site.

B. Deliver and store all materials on site a minimum of 24 hours before usage.

C. Deliver and store tile and packaged materials in original containers with seals unbroken and labels intact until time of use. Prevent damage to materials such as chipping, breakage, freezing, or excessive heat. Prevent contamination by water, moisture, foreign matter, or other causes.

**1.7 PROJECT CONDITIONS**

A. Maintain ambient and surface temperatures at not less than 60 degrees F during installation of cementitious materials and for 72 hours thereafter. Maintain ambient and surface temperatures between 65 degrees F and 95 degrees F during installation of epoxy setting and grouting materials and for 72 hours thereafter.

B. Vent temporary heaters to outside to avoid carbon dioxide damage to new tile work.

C. Provide adequate lighting for good grouting and clean-up.

**PART 2 PRODUCTS**

**2.1 TILE**

EDITOR NOTE: SPECIFY TILE IN THE FOLLOWING PARAGRAPH, OR IN A SCHEDULE AT THE END OF THIS SPECIFICATION SECTION, OR ON THE DRAWINGS.

IF MORE THAN ONE TYPE OR COLOR OF TILE, MORTAR OR GROUT MATERIAL, OR SETTING METHOD IS SPECIFIED, INDICATE WHICH RESPECTIVE COLOR, MATERIAL AND METHOD IS TO BE USED IN EACH OF THE LOCATIONS TILE IS REQUIRED.

DELETE ONE OF THE TWO FOLLOWING PARAGRAPHS.

A. Ceramic tiles shall be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ manufactured by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

B. Tile: As scheduled.

**2.2 SETTING MATERIAL MANUFACTURER**

A. Basis of Design: Parex USA, Inc., 4125 E. La Palma Ave., Suite 250, Anaheim, CA 92807 Contact: Susan Foster-Goodman, Architectural Sales & National Accounts Manager (714.319.3186 or 866.516.0061) or Technical Support (800-224-2626).

1. Substitutions must be approved.

IN THE ARTICLES BELOW, SELECT THE MATERIALS BASED ON PROJECT REQUIREMENTS. DELETE ANY UNUSED MATERIALS.

**2.3 JOINT AND SKIM COAT MATERIALS (For Cementitious Backer Units)**

A. Latex-Portland cement Mortar; ANSI A118.4:

1. Thin-Set 750 RS: a fast setting, polymer modified Portland cement thin set mortar designed to provide flexibility, strength, and rapid set times for the installation of porcelain tile, ceramic tile and natural stone to walls or floors. Suitable for both interior & exterior applications.

**2.4 LEVELING MATERIALS**

[A. Self Leveling Underlayment (Cementitious):

1. SLU Primer: a concentrated, solvent free acrylic primer and admixture used for the application of self-leveling underlayments to increase bond strength and inhibit rapid water loss during cure.

[2. Underlay SLU: a professional grade, Portland cement based, pourable, pumpable, self leveling floor underlayment, for leveling from 0 inch to 3/4 inch depth in a single pour.

[3. Underlay SLU Gold: a premium, fast-setting, high compression strength, pourable, pumpable, free flowing underlayment for leveling interior floor substrates 1/8 inch to 4 inches in a single pour.

B. Leveling Underlayments (Cementitious):

1. 626 Primer: a concentrated, solvent free acrylic primer and admixture used for the application of leveling underlayments to equalize uneven suction and ensure adequate bond.

[2. Underlay C: a trowel-applied, professional grade Portland cement based leveling floor underlayment for leveling from 1/8 inch to 3 inch depth.

[3. Underlay L: a two-component, latex and hydraulic cement powder based leveling floor underlayment that provides exceptional durability for ceramic, quarry and stone tile installations; used for leveling from 1/8 inch to 3/4 inch depth.

[4. Underlay RS: a rapid setting, trowel applied, polymer-modified leveling floor underlayment that can receive overlay in 3 to 4 hours. Anti-microbial agents are incorporated to inhibit the growth of mold and mildew. Used for leveling from 1/8 inch to 3 inch depth.

**2.5 SOUND REDUCTION MEMBRANE**

1. Sound Reduction Membrane for Thin-Set Tile and Dimension Stone Installations ANSI A 118.13.

[1. Sound Shield PNS 40: consists of a 40-mil thick rubberized asphalt membrane with a heavy film laminated on the face of the sheet and a siliconized, removable release sheet adhered on the adhesive side.

[2. Sound Shield PNS 90: consists of a 90-mil thick rubberized asphalt membrane with a heavy film laminated on the face of the sheet and a siliconized, removable release sheet adhered on the adhesive side.

3. PrepSeal PNS Primer: is a water-based latex primer that is applied to substrates previous to the installation of PNS membrane.

**2.6 CRACK ISOLATION MEMBRANE**

A. Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installations, A118.12.

[1. Fracture Guard FD: a low VOC, fast drying, single-component, thin mil, modified latex, elastomeric, mold resistant crack isolation membrane that provides superior elongation to inhibit the transfer of shrinkage and non-structural substrate cracks to the finished ceramic, quarry, porcelain or stone tile finish.

[2. Fracture Guard 5000: a low VOC, single-component, thin mil, modified latex, elastomeric, mold resistant crack isolation membrane that provides superior elongation to inhibit the transfer of shrinkage and non-structural substrate cracks to the finished ceramic, quarry, porcelain or stone tile finish.

[3. Fracture Guard 7000: a low VOC, single-component mold resistant, thin mil, modified latex crack isolation membrane designed to provide a monolithic, flexible membrane that inhibits the transfer of shrinkage and non-structural substrate cracks up to 3/8” from the substrate to the finished ceramic, porcelain or stone tile finish

[4. Hydro Guard 2000: a commercial grade, heavy duty, thin mil, load bearing, fluid-applied, fabric reinforced, elastomeric positive-side waterproofing & crack isolation membrane with exceptional elongation and high strength properties to inhibit reflective cracking. Conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

[5. BFP Membrane System: a high-performance, 100% waterproof, thin mil, trowel-applied, fabric-reinforced, heavy-duty elastomeric positive-side waterproofing and crack isolation membrane designed for use in high use commercial environments and over occupied spaces. Easily conforms to any form or irregular shape.

[6. Hydro Guard SP-1: a fast-drying thin mil, low VOC, fluid-applied elastomeric waterproofing and crack isolation membrane that provides 100% positive-side waterproofing, high strength and elongation, inhibits reflective cracking, and conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

[7. Hydro Guard 1: a thin mil, load bearing, low VOC, fluid-applied, modified elastomeric copolymer waterproofing and crack isolation membrane that provides 100% positive-side waterproofing, high strength and elongation, inhibits reflective cracking, and conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

**2.7 WATERPROOF MEMBRANE**

A. Load Bearing, Bonded, Waterproof Membrane for Thin-Set Ceramic Tile and Dimension Stone Installations; ANSI A118.10:

[1. Hydro Guard 2000: a commercial grade, heavy duty, thin mil, load bearing, fluid-applied, fabric reinforced, elastomeric positive-side waterproofing & crack isolation membrane with exceptional elongation and high strength properties to inhibit reflective cracking. Conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

[2. BFP Membrane System: a high-performance, 100% waterproof, thin mil, trowel-applied, fabric-reinforced, heavy-duty elastomeric positive-side waterproofing and crack isolation membrane designed for use in high use commercial environments and over occupied spaces. Easily conforms to any form or irregular shape.

[3. Hydro Guard SP-1: a fast-drying thin mil, low VOC, fluid-applied elastomeric waterproofing and crack isolation membrane that provides 100% positive-side waterproofing, high strength and elongation, inhibits reflective cracking, and conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

[4. Hydro Guard 1: a thin mil, load bearing, low VOC, fluid-applied, modified elastomeric copolymer waterproofing and crack isolation membrane that provides 100% positive-side waterproofing, high strength and elongation, inhibits reflective cracking, and conforms to any form or irregular shape (i.e., base flashings, parapets, drains, trenches, etc.).

**2.8 SETTING MATERIALS**

A. Portland cement Mortar, ANSI A108.1:

[1. Wall Mud: scratch and brown leveling coat, must be gauged with 150 Acrylic Latex admixture.

[2. Underlay C: a trowel-applied, professional grade Portland cement based leveling floor underlayment for leveling from 1/8 inch to 3 inch depth.

 [a. 626 Primer: a concentrated, solvent free acrylic primer and admixture used for the application of leveling underlayments to equalize uneven suction and ensure adequate bond.

B. Dry-Set Portland cement Mortar, ANSI A118.1:

EDITOR’S NOTE: The following materials may be used without latex modification on interior areas with residential or light commercial performance level requirements according to the current TCNA Handbook. Substrates must be properly prepared plumb and true masonry, concrete, cured Portland cement mortar beds, or brick. In interior dry areas only, they may be used over gypsum board.

1. 700 Premium Set: professional grade Portland cement dry thin set mortar, for typical installations of ceramic and quarry tile, pavers and dimensionally stable natural stone on floors and walls, interior and exterior applications.

C. Latex-Portland Cement Mortar ANSI A118.4.

EDITOR’S NOTE: The following materials may be used on interior or exterior areas over properly prepared plumb and true masonry, concrete, cementitious backer units, cured Portland cement mortar beds, brick, ceramic tile, marble, and properly cured HydroGuard Waterproof Membrane. In interior dry areas only, they may be used over gypsum board, and exterior grade plywood. Delete articles not required.

[1. 200/211 Flexible Mortar System: a two component, superior grade, flexible, polymer modified Portland cement thin set mortar for installation of porcelain, glass, ceramic tile and natural stone. Exceptional adhesion, resiliency, water-resistance and thermal shock & weathering resistance for exterior façade applications.

[2. 705 Pro Set Plus Thin Set: professional grade, multipurpose, EGP, modified Portland cement thin set mortar designed for installation of porcelain and ceramic tiles and natural stone installations. Suitable for wall and floor applications, interior and exterior.

[3. 710 Premium Set Plus Thin Set: premium grade, multipurpose, EGP, modified Portland cement thin set mortar with DustLess Technology designed for installation of porcelain, absorptive, semi-vitreous and vitreous tile installations, as well as ceramic tiles and natural stone. Suitable for wall and floor applications, interior and exterior.

[4. 7D10 Dust Less Thin Set: flexible latex modified Portland cement dry set mortar with Dust Less Technology for improved job site air quality and workability with ceramic tile and natural stone installations. Suitable for wall and floor applications, interior and exterior.

[5. 720 Marble Pro: a medium bed, latex modified Portland cement dry set mortar for installations requiring a medium bed mortar to compensate for irregularities in the substrate or tile. Ideal for large format ceramic, porcelain gauged and irregular stone tile installations. Suitable for wall and floor applications, interior and exterior.

[6. 735 Premium Flex: a superior grade, flexible, multi-purpose, latex modified Portland cement EGP dry thin set mortar, for demanding above grade installations that require higher strength, extended adjustability and longer open times.

[7. 750 Rapid Set Thin-Set: a fast setting, multi-purpose, latex modified, Portland cement dry thin set mortar for fast track installations that require pedestrian foot traffic service as soon as possible.

[8. 808 SC: a superior grade, quick-setting, flexible, polymer modified Portland cement thin-set mortar used for installation of ceramic tile and natural stone over sound control membranes.

[9. 820 Merlite: a lightweight, flexible, medium bed, latex modified, Portland cement EGP dry thin set mortar, with exceptional non slump and non sag performance for faster installation and excellent workability. Suitable for use on floors and walls, interior and exterior applications, for setting ceramic, mosaic, quarry, thin brick, natural stone, porcelain and glass tiles.

[10. 831 WR: a water-resistant, polymer modified Portland cement thin set for installing ceramic tile and natural stone in high moisture areas. Suitable for use on walls and floors, interior and exterior.

[11. 855 XXL One Step Adhesive: one step, polymer modified, Portland cement setting adhesive for installation of extra large format porcelain and ceramic tiles and natural stone with irregular thicknesses. Can be used for thin or medium bed applications, walls and floors, interior and exterior. Eliminates the need for back buttering.

[12. 856 XLF Floor Tile Adhesive: polymer modified, fluid, Portland cement setting mortar that provides maximum coverage for installing extra large porcelain, ceramic, ultra-thin, and stone floor tiles. Can be used for interior and exterior applications.

[13. Integra Glass Tile Color Grout: an all-in-one, thin set adhesive and grout with antimicrobial additives that inhibit growth of mold and mildew designed for use with glass and mosaic tiles to prevent “bleed through”. Color # \_\_\_\_\_\_\_\_\_.

EDITOR NOTE: THE FOLLOWING EPOXY SETTING MATERIAL IS FOR USE WHEN HEAVY OR EXTRA HEAVY PERFORMANCE LEVELS ARE REQUIRED OR WHEN ACID RESISTANCE IS NEEDED.

D. Chemical Resistant, Water Cleanable Tile Setting and Grouting Epoxy; ANSI A118.3.

1. ProEpoxy: a 100% solids, non-porous, high strength, epoxy grout and mortar for heavy duty performance in specialty areas that require chemical resistance, stain resistance, shock resistance, and impermeable sanitary performance. Excellent for moisture sensitive and resin backed stones.

**2.9 GROUTING MATERIALS**

A. Polymer Modified Latex Portland cement Grout with built in anti-microbial; ANSI A118.6 & ANSI A118.7.

[1. Versatile Color Grout: a multi-purpose, polymer modified Portland cement grout with antimicrobial additives that inhibit growth of mold and mildew and forms a colorfast, dense matrix grout for all types of ceramic and dimensional stone tiles on walls and floors. Joint widths 1/16 inch to 1/2 inch. Color # \_\_\_\_\_\_\_\_\_.

[2. Versatile XF Color Grout: a multi-purpose, professional grade, polymer modified Portland cement grout with antimicrobial additives that inhibit growth of mold and mildew and forms a colorfast, dense matrix grout for all types of ceramic and dimensional stone tiles on walls and floors. Joint widths 1/8 inch or less. Color # \_\_\_\_\_\_\_\_\_.

[3. Integra Glass Tile Color Grout: an all-in-one, thin set adhesive and grout with antimicrobial additives that inhibit growth of mold and mildew designed for use with glass and mosaic tiles to prevent “bleed through”. Color # \_\_\_\_\_\_\_\_\_.

[4. ProGrout: a fast setting, polymer modified, color consistent and efflorescence free grout designed for use with all types of ceramic and dimensional stone tiles. Joint widths 1/16 to 1/2 inch. Color # \_\_\_\_\_\_\_\_\_.

EDITOR NOTE: THE FOLLOWING EPOXY SETTING MATERIAL IS FOR USE WHEN HEAVY OR EXTRA HEAVY PERFORMANCE LEVELS ARE REQUIRED OR WHEN ACID RESISTANCE IS NEEDED.

B. Water Cleanable Tile Setting and Grouting Epoxy; ANSI A118.3:

1. ProEpoxy: a 100% solids, non-porous, high strength, epoxy grout and mortar for heavy duty performance in specialty areas that require chemical resistance, stain resistance, shock resistance, and impermeable sanitary performance. Excellent for moisture sensitive and resin backed stones. Color #\_\_\_\_\_\_\_.

**PART 3 EXECUTION**

**3.1 EXAMINATION**

A. Before work commences, examine the areas to be covered and report any flaw or adverse condition in writing. Do not proceed with the tile work until surfaces and conditions comply with the requirements indicated in the manufacturer's instructions and in ANSI A108.5

B. Verify that slope, when required, is in subfloor.

C. Protect adjoining work surfaces before tile work begins.

**3.2 PREPARATION:**

A. Floor Flatness: Install leveling material if necessary to bring floors to required flatness. Maximum variation from plane:

1. 1/4 inch in 10 feet for installations with a thick mortar bed.

2. 1/8 inch in 10 feet for thin-set mortar.

3. Leveling, when necessary, is to be accomplished using leveling materials specified in Part 2.

EDITOR NOTE: IF TILE OVER PLYWOOD SUBFLOORS IS REQUIRED, REQUIREMENTS SIMILAR TO THE FOLLOWING MINIMUM STANDARDS SHOULD BE INCLUDED IN THE DIVISION 6 SECTION COVERING PLYWOOD SUBFLOORS.

DELETE THE FOLLOWING PARAGRAPH IF PLYWOOD SUBFLOORS ARE NOT REQUIRED.

[B. Verify that plywood substrates conform to the following:

1. Limit plywood surfaces to interior floor applications only.

2. 2 layers of 5/8 inch (minimum) veneer core plywood, APA grade marked Exterior Grade, Group l, Type C/C or better and complying with U. S. Product Standard PS-1.

3. Joists shall be a minimum of 16 inches o.c.

4. Assembly: Underlayment placed at right angles to the subfloor and the joints of the two layers staggered. Underlayment screwed 6 inches o.c. around the perimeter and 8 inches o.c. throughout the body of each sheet in each direction. Deflection not greater than 1/360 of the span.

5. Installed with 1/4 inch (6 mm) wide gaps between panels and between panels and walls or other restraining abutments. If installed without a 1/4 inch (6 mm) gap between panels, joints shall be opened by cutting the underlayment to its full depth to provide a gap for expansion. This gap shall remain empty after the installation is complete.

6. Dry and free of contaminants such as sealers, cleaning compounds, coatings, oil, dust, dirt, etc. Contaminated surfaces shall be cleaned by sanding to expose raw wood.

EDITOR NOTE: IF TILE OVER CEMENTITIOUS BACKER UNITS IS REQUIRED, REQUIREMENTS SIMILAR TO THE FOLLOWING MINIMUM STANDARDS SHOULD BE INCLUDED IN THE DIVISION 6 SECTION COVERING EXTERIOR SHEATHING OR THE DIVISION 9 SECTION COVERING INTERIOR TILE BACKER BOARD.

DELETE THE FOLLOWING TWO PARAGRAPHS IF CEMENTITIOUS BACKER UNITS ARE NOT REQUIRED.

[C. Verify that framing and plywood sheathing to receive cementitious backer unit conform to the following:

1. Straight, true, of uniform dimension, and properly aligned.

2. Free and clear of any nail heads or screw heads or any other protrusions which could cause the panel to be deflected from true plane.

3. Wood Studs - These must be dry, 3-1/2 inch deep and no more than 16 inches o.c.

4. Steel Studs: 20 gauge or heavier and spaced not more than 16 inches o.c.

[D. Verify that cementitious backer units are installed in conformance with the following:

1. ANSI A108.11, the TCNA Handbook Methods, and the manufacturer's recommendations.

2. Installation temperature: Temperature within the structure is above 55 degrees F.

3. Fasteners: Wood Studs: Use conventional 1-1/2 inch galvanized roofing nails, preferably screw type, spaced a maximum of 8 inches apart; Steel studs: Use 1-1/4 inch S-12(TM), Flat Wafer Head Screws with countersinking ribs and Climaseal(TM) finish spaced a maximum of 8 inches apart.

4. Where two panels abut on a stud: A 3/4 inch round countersunk stainless steel washer slipped over fasteners in the joint between two panels so that the washer securely catches the edge of both panels.

5. Joints: All horizontal and vertical joints and corners including joints with dissimilar materials: gap approximately 1/8 inch to 3/16 inch.

6. Surface: Plumb and true within 1/8 inch in 8 feet.

**3.3 INSTALLATION - GENERAL**

A. Comply with applicable ANSI 108 series of the "American National Standard Specifications for the Installation of Ceramic Tile."

B. Comply with current TCNA installation methods indicated or, if not other otherwise indicated, as applicable to installation conditions shown.

C. Coverage and Terminations: Extend tile work into recesses an under or behind equipment and fixtures, to form a complete covering without interruptions, except as otherwise shown.

D. Intersections and Returns: Accurately form intersections and returns. Perform cutting and drilling of tile without marring visible surfaces. Carefully grind cut edges of tile abutting trim, finish or built-in items for straight aligned joints.

E. Jointing Pattern: Unless otherwise shown, lay tile in grid pattern. Align joints when adjoining floor tile with tile, base, or trim on walls when wall tile, base or trim are same size. Layout tile work and center tile fields in both directions in each space or on each wall area. Adjust to minimize tile cutting. Provide uniform joint widths, unless otherwise shown.

F. Expansion Joints: Locate expansion joints and other sealant filled joints, including control, contraction and isolation joints, where indicated, or if not indicated, at spacing and locations recommended by EJ 171 in the TCNA "Handbook for Ceramic Tile Installation", and approved by Architect.

1. Prepare joints and apply sealants to comply with referenced installation standards and sealant manufacturer's instructions.

DELETE THE FOLLOWING PARAGRAPH IF CEMENTITIOUS BACKER UNITS ARE NOT REQUIRED.

[G. Cementitious Backer Units: Prepare cementitious backer units complying with the following:

1. Solidly fill gaps between panels with joint material indicated. A 2 inch wide fiber glass mesh tape shall then be embedded in skim coat of the same mortar over the joints and in the corners. Apply skim coat material indicated to bring wall to acceptable tolerances. Do not exceed manufacturer's recommended thickness of materials.

2. Allow material to cure as per manufacturer's directions before application of additional materials.

DELETE THE FOLLOWING PARAGRAPH IF SOUND REDUCTION MEMBRANE IS NOT REQUIRED.

H. Sound Reduction Membrane: Install membrane, where required, to comply with manufacturer's instructions.

DELETE THE FOLLOWING PARAGRAPH IF CRACK ISOLATION MEMBRANE IS NOT REQUIRED.

I. Crack Isolation Membrane: Install membrane, where required, to comply with manufacturer's instructions.

DELETE THE FOLLOWING PARAGRAPH IF WATERPROOFING MEMBRANE IS NOT REQUIRED.

J. Waterproof Membrane: Install waterproof membrane, where required, to comply with manufacturer's instructions.

1. Manufacturer's Instructions: Install proprietary components to comply with manufacturer's instructions.

EDITOR NOTE: EDIT THE FOLLOWING PARAGRAPH TO INCLUDE APPLICABLE SETTING METHODS. IF SETTING METHODS ARE SCHEDULED ON THE DRAWINGS, DELETE THE FOLLOWING PARAGRAPH.

K. Install tile to comply with referenced TCNA and ANSI installation standards, using setting materials indicated.

L. Curing set tile:

1. 72 hours before grouting when the temperature is low or the humidity is high.

2. 48 hours before grouting when hot, dry conditions exist.

3. Check the bond strength carefully before grouting.

M. Grout the tile to comply with referenced installation standards using grouting materials indicated.

DELETE ONE OF THE FOLLOWING TWO PARAGRAPHS IF BOTH ARE NOT REQUIRED.

1. Chemical Resistant, Water Cleanable Grouting Epoxy; ANSI A108.6

2. Latex Portland cement Grout ANSI A108.10

**3.4 CLEANING AND PROTECTION**

A. Upon completion of setting and grouting, clean all ceramic tile surfaces so they are free of foreign matter.

B. Acid Cleaning: Tile may be cleaned with sulfamic acid solutions complying with the following:

1. Only if permitted by tile and grout manufacturer’s printed instructions.

2. No sooner than 14 days after installation.

3. Protect metal surfaces, cast iron and vitreous plumbing fixtures from effects of acid cleaning.

4. Flush surface with clean water before and after cleaning.

5. Do not clean Chemical Resistant, Water Cleanable Grouting Epoxy (A118.3) with acid.

C. Protection: When recommended by tile manufacturer, apply a protective coat of neutral protective cleaner to completed tile walls and floors. Protect installed tile work with Kraft paper or other heavy covering during construction period to prevent staining damage and wear.

1. Protective Coatings: Before final inspection, remove protective coverings and rinse neutral cleaner from tile surfaces.

D. Finished Tile Work: Leave finished installation clean and free of cracked, chipped, broken, unbonded, or otherwise defective tile work.

E. Protect tile installation from traffic as specified in ANSI specifications.

F. Protect tile installation from traffic according to manufacturer's instructions.

Schedules: If more than one type or color of tile, mortar, grout, or setting method is specified, include a schedule either in the specification or on the drawings to indicate which type and color of tile, mortar, grout, and setting method is to be used in each location where tile is required.

END OF SECTION *Rev. April 2013*

*Disclaimer: This guide specification is intended for use by a qualified designer. The guide specification is not intended to be used verbatim as an actual specification without appropriate modifications for the specific use intended. The guide specification must be integrated into and coordinated with the procedures of each design firm, and the requirements of a specific project. For additional assistance, contact Parex USA’s Architectural Sales (866.516.0061)* *or Technical Support (800-224-2626).*