SECTION 09300

TILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary

Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Ceramic floor and wall tile.

2. Stone thresholds.

3. Waterproof membrane.

4. Crack isolation membrane.

5. Acoustical underlayment.

6. Tile backing panels.

1.3 DEFINITIONS

A. General: Definitions in the ANSI A108 series of tile installation standards and in ANSI A137.1

apply to Work of this Section unless otherwise specified.

B. ANSI A108 Series: ANSI A108.01, ANSI A108.02, ANSI A108.1A, ANSI A108.1B,

ANSI A108.1C, ANSI A108.4, ANSI A108.5, ANSI A108.6, ANSI A108.8, ANSI A108.9, ANSI A108.10, ANSI A108.11, ANSI A108.12, ANSI A108.13, ANSI A108.14, ANSI A108.15, ANSI A108.16, and ANSI A108.17, which are contained in "American National Standard Specifications for Installation of Ceramic Tile."

C. Module Size: Actual tile size plus joint width indicated.

D. Face Size: Actual tile size, excluding spacer lugs.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show locations of each type of tile and tile pattern. Where custom patterns

are indicated, provide Shop Drawings showing location and extent of each custom pattern. Show widths, details, and locations of expansion, contraction, control, and isolation joints in tile substrates and finished tile surfaces.

C. Samples for Verification:

1. Full-size units of each type and composition of tile and for each color and finish required.

2. Assembled samples mounted on a rigid panel, with grouted joints, for each type and composition of tile and for each color and finish required. Make samples at least 12 inches square, but not fewer than 4 tiles. Use grout of type and in color or colors approved for completed Work.

3. Full-size units of each type of trim and accessory for each color and finish required.

4. Stone thresholds in 6-inch lengths.

5. Metal edge strips in 6-inch lengths.

D. Qualification Data: For qualified Installer.

E. Master Grade Certificates: For each shipment, type, and composition of tile, signed by tile

manufacturer and Installer.

F. Product Certificates: For each type of product, signed by product manufacturer.

G. Material Test Reports: For each tile-setting and -grouting product.

1.5 QUALITY ASSURANCE

A. Source Limitations for Tile: Obtain tile of each type and color or finish from one source or

producer.

1. Obtain tile of each type and color or finish from same production run and of consistent quality in appearance and physical properties for each contiguous area.

B. Source Limitations for Setting and Grouting Materials: Obtain ingredients of a uniform quality

for each mortar, adhesive, and grout component from one manufacturer and each aggregate from one source or producer.

C. Source Limitations for Other Products: Obtain each of the following products specified in this

Section from a single manufacturer for each product:

D. Mockups: Build mockups to verify selections made under sample submittals and to

demonstrate aesthetic effects and set quality standards for materials and execution.

1. Build mockup of each type of floor tile installation.

2. Build mockup of each type of wall tile installation.

3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site.

1. Review requirements in ANSI A108.01 for substrates and for preparation by other trades.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store packaged materials in original containers with seals unbroken and labels

intact until time of use. Comply with requirements in ANSI A137.1 for labeling tile packages.

B. Store tile and cementitious materials on elevated platforms, under cover, and in a dry location.

C. Store aggregates where grading and other required characteristics can be maintained and

contamination can be avoided.

D. Store liquid materials in unopened containers and protected from freezing.

E. Handle tile that has temporary protective coating on exposed surfaces to prevent coated

surfaces from contacting backs or edges of other units. If coating does contact bonding surfaces of tile, remove coating from bonding surfaces before setting tile.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install tile until construction in spaces is complete and

ambient temperature and humidity conditions are maintained at the levels indicated in referenced standards and manufacturer's written instructions.

1.8 EXTRA MATERIALS

A. Furnish extra materials that match and are from same production runs as products installed

and that are packaged with protective covering for storage and identified with labels describing contents.

1. Tile and Trim Units: Furnish quantity of full-size units equal to 3 percent of amount installed for each type, composition, color, pattern, and size indicated.

2. Grout: Furnish quantity of grout equal to 3 percent of amount installed for each type, composition, and color indicated.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For tile installed on walkway surfaces, provide products with the

following values as determined by testing identical products per ASTM C 1028.

1. Level Surfaces: Minimum 0.6.

2. Step Treads: Minimum 0.6.

3. Ramp Surfaces: Minimum 0.8.

2.2 PRODUCTS, GENERAL

A. ANSI Ceramic Tile Standard: Provide tile that complies with ANSI A137.1 for types,

compositions, and other characteristics indicated.

1. Provide tile complying with Standard grade requirements unless otherwise indicated.

B. ANSI Standards for Tile Installation Materials: Provide materials complying with

ANSI A108.02, ANSI standards referenced in other Part 2 articles, ANSI standards referenced by TCA installation methods specified in tile installation schedules, and other requirements specified.

C. Factory Blending: For tile exhibiting color variations within ranges, blend tile in factory and

package so tile units taken from one package show same range in colors as those taken from other packages and match approved Samples.

D. Mounting: For factory-mounted tile, provide back- or edge-mounted tile assemblies as

standard with manufacturer unless otherwise indicated.

1. Where tile is indicated for installation in wet areas, do not use back- or edge-mounted tile assemblies unless tile manufacturer specifies in writing that this type of mounting is suitable for installation indicated and has a record of successful in-service performance.

2.3 TILE PRODUCTS

A. Unit Tile 1- for use in unit bathroom floors

1. Manufacturers: to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Stone Source

c. approved Equal

2. Style: Tranquility

3. Module Size: 12” x 24”

4. Thickness: 3/8 inches.

5. Colors: To be selected by condo owners

Tier 1 (6 units)

203, 204, 205, 303, 304 and 305

Owners to select from the following colors: Botticino Matte, Charcoal Black Matte, Olive Matte

Tier 2 (16 Units)

201, 202, 206, 301, 302, 306, 401, 402, 403, 404, 406, 501, 502, 503, 504

506

Owners to select from the entire color range of Tranquility Matte tiles

Tier 3 (2 Units)

601, 602

Product TBD –Provide price for installation and allowance of $5 per square foot material cost

6. Joint Width: 1/8”

7. Grout Color: As selected by Architect from manufacturer's full range.

8. Pattern Repeat: As indicated on finish plan

9. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile.

B. Unit Tile 2- For use in shower side walls

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Porcelanosa

b. Approved equal.

2. Style: Crystal White

a. Module Size: 8”x13” in units 203, 204, 205, 303, 304 and 305

b. Module Size: 13” x 40” in units 201, 202, 206, 301, 302, 306, 401, 402, 403, 404, 406, 501, 502, 503, 504, 506

c. Unit 601, 602 Product TBD –Provide price for installation and allowance of $10 per square foot material cost

3. Thickness: Manufacturer’s standard.

4. Joint Width: 1/16”

5. Grout Color: As selected by Architect from manufacturer's full range.

6. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile.

C. Unit Tile 3- Shower back Wall- Accent Tile

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Porcelanosa

b. Approved equal.

2. Style:

a. Module Size: 8”x13” in units 203, 204, 205, 303, 304 and 305- style options Yakarta Blanco, Jersey Nieve, Line Anthracita

b. Module Size: 13” x 40” in units 201, 202, 206, 301, 302, 306, 401, 402, 403, 404, 406, 501, 502, 503, 504, 506 Style Options: Yakarta Blanco, Jersey Nieve, Line Anthracita, Laja Blanco, Japan Line Marine

3. Units 601, 602 Provide Shower tile installation and allowance of $10 per square foot for wall tile

3. Grout Color: As selected by Architect from manufacturer's full range.

4. Joint Width: 1/16”

5. Trim Units: Coordinated with sizes and coursing of adjoining flat tile where applicable and matching characteristics of adjoining flat tile.

D. Tile Type 4-Common Area Floor Tile

TBD Provide installation and allowance of $5 per square foot material

2.4 THRESHOLDS

A. General: Fabricate to sizes and profiles indicated or required to provide transition between

adjacent floor finishes.

1. Bevel edges at 1:2 slope, with lower edge of bevel aligned with or up to 1/16 inch above adjacent floor surface. Finish bevel to match top surface of threshold. Limit height of threshold to 1/2 inch or less above adjacent floor surface.

B. Marble Thresholds: ASTM C 503, with a minimum abrasion resistance of 10 per

ASTM C 1353 or ASTM C 241 and with honed finish.

1. Transitions at Guestroom Bathrooms- Carrera marble

2. Finish: High honed and sealed.

3. Sealer: Colorless, slip- and stain-resistant sealer that does not affect color or physical properties of stone surfaces, as recommended by stone producer for application indicated.

2.5 TILE BACKING PANELS

A. Reference Division 09 Section “Gypsum Board.”

2.6 CRACK ISOLATION AND WATERPROOFING MEMBRANE

A. General: Manufacturer's standard product, selected from the following, that complies with

ANSI A118.12 for high performance and is recommended by the manufacturer for the application indicated. Include reinforcement and accessories recommended by manufacturer.

B. Fabric-Reinforced, Fluid-Applied Membrane: System consisting of liquid-latex rubber or

elastomeric polymer and fabric reinforcement.

1. Products: Subject to compliance with requirements, Provide Laticrete 9235 Waterproof Membrane by Laticrete International, Inc., or an equal approved by the Architect.

2.7 SETTING MATERIALS

A. Dry-Set Portland Cement Mortar (Thin Set): ANSI A118.1.

1. For wall applications, provide mortar that complies with requirements for nonsagging mortar in addition to the other requirements in ANSI A118.1.

B. Latex-Portland Cement Mortar: Latex-modified portland cement mortar complying with ANSI

A118.4.

1. Product: Subject to compliance with requirements, provide "4237 Latex Thin-Set Mor-tar Additive/211 Crete Filler Powder" as manufactured by Laticrete International, Inc., or approved equal.

a. Combine at job site with prepackaged dry mortar mix supplied or specified by la-tex additive manufacturer.

2.8 GROUT MATERIALS

A. Polymer-Modified Tile Grout: ANSI A118.7.

1. Product: Subject to compliance with requirements, provide “Platinum” as manufactured by Laticrete International, Inc.

2.9 ELASTOMERIC SEALANTS

A. General: Provide sealants, primers, backer rods, and other sealant accessories that comply with

the following requirements and with the applicable requirements in Division 07 Section "Joint Sealants."

1. Sealants shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Colors: Provide colors of exposed sealants to match colors of grout in tile adjoining sealed

joints unless otherwise indicated.

C. One-Part, Mildew-Resistant Silicone Sealant (Guestroom Bathrooms): ASTM C 920; Type S;

Grade NS; Class 25; Uses NT, G, A, and, as applicable to nonporous joint substrates indicated, O; formulated with fungicide, intended for sealing interior ceramic tile joints and other nonporous substrates that are subject to in-service exposures of high humidity and extreme temperatures.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; Dow Corning 786.

b. GE Silicones; a division of GE Specialty Materials; Sanitary 1700.

c. Pecora Corporation; Pecora 898 Sanitary Silicone Sealant.

1) Color: Clear, unless otherwise indicated.

2.10 MISCELLANEOUS MATERIALS

A. Trowelable Underlayments and Patching Compounds: Latex-modified, portland cement-based

formulation provided or approved by manufacturer of tile-setting materials for installations indicated.

B. Metal Edge Strips: Subject to compliance with requirements, provide anodized aluminum metal

edge strips as manufactured by Blanke or Milgo Bufkin, in dimensions and finishes selected by the Architect.

C. Temporary Protective Coating: Either product indicated below that is formulated to protect

exposed surfaces of tile against adherence of mortar and grout; compatible with tile, mortar, and grout products; and easily removable after grouting is completed without damaging grout or tile.

1. Petroleum paraffin wax, fully refined and odorless, containing at least 0.5 percent oil with a melting point of 120 to 140 deg F per ASTM D 87.

2. Grout release in form of manufacturer's standard proprietary liquid coating that is specially formulated and recommended for use as temporary protective coating for tile.

D. Tile Cleaner: A neutral cleaner capable of removing soil and residue without harming tile and

grout surfaces, specifically approved for materials and installations indicated by tile and grout manufacturers.

E. Grout Sealer: Manufacturer's standard silicone product for sealing grout joints and that does

not change color or appearance of grout.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Bonsal American; an Oldcastle company; Grout Sealer.

b. C-Cure; Penetrating Sealer 978.

2.11 MIXING MORTARS AND GROUT

A. Mix mortars and grouts to comply with referenced standards and mortar and grout

manufacturers' written instructions.

B. Add materials, water, and additives in accurate proportions.

C. Obtain and use type of mixing equipment, mixer speeds, mixing containers, mixing time, and

other procedures to produce mortars and grouts of uniform quality with optimum performance characteristics for installations indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where tile will be installed, with Installer present, for

compliance with requirements for installation tolerances and other conditions affecting performance of installed tile.

1. Verify that substrates for setting tile are firm, dry, clean, free of coatings that are incompatible with tile-setting materials including curing compounds and other substances that contain soap, wax, oil, or silicone; and comply with flatness tolerances required by ANSI A108.01 for installations indicated.

2. Verify that concrete substrates for tile floors installed with adhesives bonded mortar bed or thin-set mortar comply with surface finish requirements in ANSI A108.01 for installations indicated.

a. Verify that surfaces that received a steel trowel finish have been mechanically scarified.

b. Verify that protrusions, bumps, and ridges have been removed by sanding or grinding.

3. Verify that installation of grounds, anchors, recessed frames, electrical and mechanical units of work, and similar items located in or behind tile has been completed.

4. Verify that joints and cracks in tile substrates are coordinated with tile joint locations; if not coordinated, adjust joint locations in consultation with Architect.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Fill cracks, holes, and depressions in concrete substrates for tile floors installed with adhesives

or thin-set mortar with trowelable leveling and patching compound specifically recommended by tile-setting material manufacturer.

B. Where indicated, prepare substrates to receive waterproofing by applying a reinforced mortar

bed that complies with ANSI A108.1A and is sloped 1/4 inch per foot toward drains.

C. Blending: For tile exhibiting color variations, verify that tile has been factory blended and

packaged so tile units taken from one package show same range of colors as those taken from other packages and match approved Samples. If not factory blended, either return to manufacturer or blend tiles at Project site before installing.

3.3 TILE INSTALLATION

A. Comply with TCA's "Handbook for Ceramic Tile Installation" for TCA installation methods

specified in tile installation schedules. Comply with parts of the ANSI A108 Series "Specifications for Installation of Ceramic Tile" that are referenced in TCA installation methods, specified in tile installation schedules, and apply to types of setting and grouting materials used.

1. For the following installations, follow procedures in the ANSI A108 Series of tile installation standards for providing 95 percent mortar coverage:

a. Tile floors in wet areas.

b. Tile floors composed of tiles 8 by 8 inches or larger.

c. Tile floors composed of rib-backed tiles.

B. Extend tile work into recesses and under or behind equipment and fixtures to form complete

covering without interruptions unless otherwise indicated. Terminate work neatly at obstructions, edges, and corners without disrupting pattern or joint alignments.

C. 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. Fit tile closely to electrical outlets, piping, fixtures, and other penetrations so plates, collars, or covers overlap tile.

D. Jointing Pattern: Lay tile in patterns indicated on the Finish Schedule, or if not indicated on the

Finish Schedule, as directed by the Architect. Lay out tile work and center tile fields in both directions in each space or on each wall area. Lay out tile work to minimize the use of pieces that are less than half of a tile. Provide uniform joint widths unless otherwise indicated.

1. For tile mounted in sheets, make joints between tile sheets same width as joints within tile sheets so joints between sheets are not apparent in finished work.

2. Where adjoining tiles on floor, base, walls, or trim are specified or indicated to be same size, align joints.

3. Where tiles are specified or indicated to be whole integer multiples of adjoining tiles on floor, base, walls, or trim, align joints unless otherwise indicated.

E. Lay out tile wainscots to dimensions indicated or to next full tile beyond dimensions indicated.

F. Expansion Joints: Provide expansion joints and other sealant-filled joints, including control,

contraction, and isolation joints, where indicated. Form joints during installation of setting materials, mortar beds, and tile. Do not saw-cut joints after installing tiles.

1. Where joints occur in concrete substrates, locate joints in tile surfaces directly above them.

2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."

G. Stone Thresholds: Install stone thresholds in same type of setting bed as adjacent floor unless

otherwise indicated.

1. Do not extend waterproofing or crack isolation membrane under thresholds set in latex-portland cement mortar. Fill joints between such thresholds and adjoining tile set on waterproofing or crack isolation membrane with elastomeric sealant.

H. Metal Edge Strips: Install at locations indicated.

I. Grout Sealer: Apply grout sealer to cementitious grout joints in tile floors according to grout-

sealer manufacturer's written instructions. As soon as grout sealer has penetrated grout joints, remove excess sealer and sealer from tile faces by wiping with soft cloth.

3.5 TILE BACKING PANEL INSTALLATION

A. Install tile backing panels and treat joints according to ANSI A108.11 and manufacturer's written

instructions for type of application indicated. Use latex-portland cement mortar for bonding material unless otherwise directed in manufacturer's written instructions.

3.6 WATERPROOFING/CRACK ISOLATION MEMBRANE INSTALLATION

A. Install waterproofing to comply with ANSI A108.13 and manufacturer's written instructions to

produce waterproof membrane of uniform thickness and bonded securely to substrate.

B. Do not install tile or setting materials over waterproofing until waterproofing has cured and

been tested to determine that it is watertight.

3.7 CLEANING AND PROTECTING

A. Cleaning: On completion of placement and grouting, clean all ceramic tile surfaces so they are

free of foreign matter.

1. Remove epoxy and latex-portland cement grout residue from tile as soon as possible.

2. Clean grout smears and haze from tile according to tile and grout manufacturer's written instructions but no sooner than 10 days after installation. Use only cleaners recommended by tile and grout manufacturers and only after determining that cleaners are safe to use by testing on samples of tile and other surfaces to be cleaned. Protect metal surfaces and plumbing fixtures from effects of cleaning. Flush surfaces with clean water before and after cleaning.

3. Remove temporary protective coating by method recommended by coating manufacturer and that is acceptable to tile and grout manufacturer. Trap and remove coating to prevent drain clogging.

B. Protect installed tile work with kraft paper or other heavy covering during construction period

to prevent staining, damage, and wear. If recommended by tile manufacturer, apply coat of neutral protective cleaner to completed tile walls and floors.

C. Prohibit foot and wheel traffic from tiled floors for at least seven days after grouting is

completed.

D. Before final inspection, remove protective coverings and rinse neutral protective cleaner from

tile surfaces.

3.8 INTERIOR TILE INSTALLATION SCHEDULE

A. General: Provide interior tile as indicated on the Drawings and Finish Schedule.

B. Interior Floor Installations, Concrete Subfloors:

1. Tile Installation F122: Thin-set mortar on waterproof membrane; TCA F122.

a. Tile Type: Ceramic

b. Thin-Set Mortar: Latex-portland cement mortar.

c. Grout: Polymer-modified unsanded or epoxy grout.

C. Interior Wall Installations, Metal Studs:

1. Tile Installation W244: Thin-set mortar on cementitious backer units or fiber cement underlayment over cleavage membrane; TCA W244.

a. Tile Type: Glazed Ceramic.

b. Thin-Set Mortar: Latex-portland cement mortar.

c. Grout: Polymer-modified unsanded grout.

D. Interior Wall Installations, Solid Backing:

1. Substrate; TCA W211.

a. Tile Type: Unglazed Porcelain Ceramic.

b. Thin-Set Mortar: Dry set mortar with acrylic latex additive.

c. Grout: Polymer-modified unsanded grout.

END OF SECTION 09 30 00