

Brandywine School District

06/04/2020

TO: ALL OFFERORS
FROM: Carol Riddle
Construction Contract Coordinator
SUBJECT: ADDENDUM # 2: BSD2009A-GC-BHS_PH_3

ADDENDUM # 2

All other terms and conditions remain the same.

ADDENDUM NO. 2 ISSUED BY

ABHA Architects, Inc.
1621 N. Lincoln Street
Wilmington, Delaware 19806

NOTICE: Attach this Addendum to the Project Manual for this project. It modifies and becomes a part of the Contract documents. Work or materials not specifically mentioned herein are to be as described in the main body of the Specifications and as shown on the Drawings.

Acknowledge receipt of the Addendum in the space provided on the Bid Form. This Addendum is being transmitted to contractors who have received Contract Documents. If there are any problems with legibility or content, please contact ABHA Architects, Inc. (302) 658-6426.

ATTACHMENTS

Specifications:

Section 09 2116 GYPSUM BOARD ASSEMBLIES
Section 09 3000 TILING
Section 99 9123 –INTERIOR PAINTING

BIDDERS QUESTIONS:

1. In area B103 the plumbing drawings show cutting a trench through the area, the architectural drawings show the entire floor being removed? Am I safe in assuming the Base Bid should be the entire floor?

Remove existing slab and provide depressed concrete slab as detailed.

2. In the Demolition Key Notes, Note 22 refers to Removing Slab on Composite Deck and I do not see this called out anywhere in the drawings. Can you please confirm that this is not used.

Removal of second floor slab for exhaust ductwork. See shaded area in classroom B201 on Demolition Plan D1 on Sheet A-101.2

3. Please reference spec section 09 3000 Tiling. We note that a total of 6 TNCA Methods for floor installation have been referenced in spec section 09 3000. Can you please specify which is required for the floor tile installation?

See attached REVISED Section 09 3000 TILING

4. Can you please confirm that thickset method, (otherwise known as wet bed or mud bed), will not be needed for the floor and wall tile installation? If it will, can you please specify the locations.

See attached REVISED Section 09 3000 TILING.

5. Can please provide the floor substrate in all restrooms? Are they plywood or Concrete? If substrates are concrete, are there any structural drawings available showing existing control joints?

First Floor: Existing and New Concrete Slab on grade. (2inch depressed)

Second Floor: Existing Composite Concrete Deck. (2inch depressed)

6. Please reference the following drawings: I-111.2, I-111.3, and I-112.3. We note that Finish Keynote number 4 asks for patching of existing ceramic wall tile and base in the following areas: C110, C109A, C205, and C206. Please provide a square footage amount of patching needed in these areas and the material.

Tile repair is NOT required in Rooms C110 and C205.

Rooms C109 and 206 provide ceramic wall base for entire perimeter of rooms. Provide glazed ceramic 6x6 tile for areas of remove plumbing fixtures and toilet accessories. Color to match existing. Own 60 square feet.

7. Please reference I-001. Can you please confirm the location of Ceramic Wall tile finishes CWT-4, CWT-5, and CWT-6. I-001 references the location as Servery, however we don't see any elevations nore do we see any Servery in finished floor plans.

CWT-4, CWT-5, and CWT-6 not used

8. Please reference spec section 09 3000 Tiling. We note that a specification for Quarry Tile has been given. Can you confirm that Quarry Tile will not be needed for this project. If it will, can you please specify a location. We also need a manufacturer, product line, color, and size.

Quarry Tile is not required. See attached REVISED Section 09 3000 TILING.

9. Can you please specify the location of CWT-3?

CWT – 3 is NOT required.

10. I didn't see any mention of MBE goals or requirements. Are they required for this project.

Not required.

11. Will the building permit be paid by the owner or do we need to included it in our proposal for the project?

Owned by Awarded Contractor.

12. Has the permit been submitted to the municipality for consideration?

To be submitted by Awarded Contractor.

13. I was wondering if mechanical subcontractors need to be DPMC certified for this project?

DPMC certification is not required.

14. A403 detail E4 says provide epoxy ceiling. Please clarify.

Change not to say paint exposed ceiling.

15. The exhaust fan exact location on area B and are we running a new feeder for it? my electrical plans don't show or either the mechanicals all it shows is the system requirements table.

Exhaust fan EF-6 is located on roof toward the middle back of the (4) toilet rooms. Provide 2#12+#12G – 3/4”C new feeder and 20A circuit breaker. Connect exhaust fan to local 120V panel.

16. Exact relocation where the FACP is going to go, they gave us two options on the drawings.

Relocate FACP to Lobby B103.

17. On c-4 area c on the electrical demo plans shows some symbols that are not on my demo legend I am assuming they are down lights?

Downlight or surface mounted round light fixture.

CHANGES TO PREBID MEETING:

ITEM 3 PARAGRAPH d. SUBPARAGRAPH i: ADD

Johnson Controls
Matt McCarville
Cell Number: 302-373-1541

CHANGES TO PROJECT MANUAL:

Replace existing Section with attached:

Section 09 3000 TILING

Add the following Sections:

Section 09 2116 GYPSUM BOARD ASSEMBLIES
Section 09 9123 –INTERIOR PIANTING

Modify the following Sections: N/A

CHANGES TO DRAWINGS:

Replace ENTIRE drawing with attached: N/A

Add the following Drawings: N/A

Modify the following Drawings:

DRAWING A-101.2

ADD Keynote 22 to shaded area in class room B201on Demolition Plan D1.

DRAWING A-403

Plan E4 Change not “provide epoxy ceiling” to PAINT EXPOSED CEILING

DRAWING I-001

DELETE: Ceramic Wall Tile CWT-3CWT-4, CWT-5, and CWT-6

DRAWING E-101

PLAN C: Change light fixture in room C119 from A3 to type B

END OF ADDENDUM NO. 2

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Gypsum sheathing.
- E. Cementitious backing board.
- F. Gypsum wallboard.
- G. Joint treatment and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- B. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- C. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.
- D. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.

1.03 REFERENCE STANDARDS

- A. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members; 2014, with Editorial Revision (2015).
- B. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products; 2017.
- C. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2017a.
- D. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness; 2015.
- E. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs; 2016.
- F. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base; 2014a.
- G. ASTM C1278/C1278M - Standard Specification for Fiber-Reinforced Gypsum Panel; 2017.
- H. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- I. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels; 2018.
- J. ASTM C1658/C1658M - Standard Specification for Glass Mat Gypsum Panels; 2013.
- K. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber; 2016.
- L. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements; 2009.
- M. ASTM E413 - Classification for Rating Sound Insulation; 2010.

- N. GA-216 - Application and Finishing of Gypsum Panel Products; 2016.
- O. UL (FRD) - Fire Resistance Directory; current edition.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on metal framing, gypsum board, accessories, and joint finishing system.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.
- D. Test Reports: For stud framing products that do not comply with ASTM C645 or ASTM C754, provide independent laboratory reports showing maximum stud heights at required spacings and deflections.

1.05 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing.

PART 2 PRODUCTS

2.01 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
 - 1. CertainTeed Corporation; ____: www.certainteed.com/#sle.
 - 2. Georgia-Pacific Gypsum; ____: www.gpgypsum.com/#sle.
 - 3. National Gypsum Company; ____: www.nationalgypsum.com/#sle.
 - 4. USG Corporation; ____: www.usg.com/#sle.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Abuse Resistant Wallboard:
 - 1. Application: at all gypsum board partitions, 9 feet and below.
 - 2. Surface Abrasion: Level 2, minimum, when tested in accordance with ASTM C1629/C1629M.
 - 3. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 4. Paper-Faced Type: Gypsum wallboard, as defined in ASTM C1396/C1396M.
 - 5. Unfaced Type: Interior fiber-reinforced gypsum panels, as defined in ASTM C1278/C1278M.
 - 6. Type: Fire-resistance-rated Type X, UL or WH listed.
 - 7. Thickness: 5/8 inch.
 - 8. Edges: Tapered.
 - 9. Products:
 - a. National Gypsum Company; Gold Bond Hi-Abuse XP Gypsum Board.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
 - 1. Application: Vertical surfaces behind thinset tile, except in wet areas.
 - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
 - 3. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
 - 4. Type: Regular and Type X, in locations indicated.
 - 5. Type X Thickness: 5/8 inch.

6. Edges: Tapered.
7. Products:
 - a. Georgia-Pacific Gypsum; DensArmor Plus.
 - b. National Gypsum Company; Gold Bond XP Gypsum Board.
 - c. USG; Fiberock Aqua-Tough Interior Panel.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- D. Shaftwall and Coreboard: Type X; 1 inch thick by 24 inches wide, beveled long edges, ends square cut.
 1. Glass Mat Faced Type: Glass mat shaftliner gypsum panel or glass mat coreboard gypsum panel as defined in ASTM C1658/C1658M.
 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.

2.02 GYPSUM WALLBOARD ACCESSORIES

- A. Acoustic Insulation: As specified in Section 07 2100.
- B. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- C. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
 1. Types: As detailed or required for finished appearance.
- D. High Build Drywall Surfacers: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.
 1. Products:
 - a. USG Sheetrock Brand Tuff-Hide Primer-Surfacer.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- F. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- G. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 SHAFT WALL INSTALLATION

- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
 1. Fasten runners to structure with short leg to finished side, using appropriate power-driven fasteners at not more than 24 inches on center.
- B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.
 1. On walls over sixteen feet high, screw-attach studs to runners top and bottom.
 2. Seal perimeter of shaft wall and penetrations with acoustical sealant.

3.03 ACOUSTIC ACCESSORIES INSTALLATION

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.

- B. Acoustic Sealant: Install in accordance with manufacturer's instructions.
 - 1. Place two beads continuously on substrate before installation of perimeter framing members.
 - 2. Place continuous bead at perimeter of each layer of gypsum board.
 - 3. Seal around all penetrations by conduit, pipe, ducts, and rough-in boxes, except where firestopping is provided.

3.04 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Single-Layer Nonrated: Install gypsum board in most economical direction, with ends and edges occurring over firm bearing.
- C. Double-Layer, Nonrated: Use gypsum board for first layer, placed parallel to framing or furring members, with ends and edges occurring over firm bearing. Use glass mat faced gypsum board at exterior walls and at other locations as indicated. Place second layer perpendicular to framing or furring members. Offset joints of second layer from joints of first layer.
- D. Installation on Metal Framing: Use screws for attachment of gypsum board.

3.05 INSTALLATION OF TRIM AND ACCESSORIES

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
 - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

END OF SECTION

SECTION 09 9123
INTERIOR PAINTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Materials for backpriming woodwork.
- D. Field applied primers are in addition to shop primers.
- E. Scope: Finish interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Both sides and edges of plywood backboards for electrical and telecom equipment before installing equipment.
 - 2. Elevator pit ladders.
 - 3. Prime surfaces to receive wall coverings.
 - 4. Mechanical and Electrical:
 - a. In finished areas, paint insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. In finished areas, paint shop-primed items.
 - c. Paint interior surfaces of air ducts and convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint to visible surfaces.
 - d. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.
- F. Do Not Paint or Finish the Following Items:
 - 1. Items factory-finished unless otherwise indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, bar code labels, and operating parts of equipment.
 - 5. Stainless steel, anodized aluminum, bronze, terne coated stainless steel, and lead items.
 - 6. Marble, granite, slate, and other natural stones.
 - 7. Floors, unless specifically indicated.
 - 8. Ceramic and other tiles.
 - 9. Brick, architectural concrete, cast stone, integrally colored plaster and stucco.
 - 10. Glass.
 - 11. Acoustical materials, unless specifically indicated.
 - 12. Concealed pipes, ducts, and conduits.

1.02 RELATED REQUIREMENTS

- A. Section 05 5000 - Metal Fabrications: Shop-primed items.
- B. Section 05 5100 - Metal Stairs: Shop-primed items.

1.03 DEFINITIONS

- A. Comply with ASTM D16 for interpretation of terms used in this section.

1.04 REFERENCE STANDARDS

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.
- B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2014.
- C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 2007.
- D. SSPC-SP 13 - Surface Preparation of Concrete; (Reaffirmed 2015); 2003.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
 - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
 - 2. Cross-reference to specified paint system(s) product is to be used in; include description of each system.
 - 3. Manufacturer's installation instructions.
- C. Samples: Submit three paper "draw down" samples, 8-1/2 by 11 inches in size, illustrating range of colors available for each finishing product specified.
 - 1. Where sheen is specified, submit samples in only that sheen.
 - 2. Where sheen is not specified, discuss sheen options with Architect before preparing samples, to eliminate sheens definitely not required.
 - 3. Allow 30 days for approval process, after receipt of complete samples by Architect.
 - 4. Paint color submittals will not be considered until color submittals for major materials not to be painted, such as masonry, factory finished metals, and wood doors, have been approved.
- D. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
- E. Manufacturer's Instructions: Indicate special surface preparation procedures.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.06 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.

1.07 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.08 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Minimum Application Temperatures for Paints: 50 degrees F for interiors unless required otherwise by manufacturer's instructions.
- D. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide paints and finishes from the same manufacturer to the greatest extent possible.
 - 1. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
- B. Paints and Coatings:
 - 1. Sherwin-Williams Company: www.sherwin-williams.com/#sle.
 - 2. Benjamin Moore: www.benjaminmoore.com.
- C. Primer Sealers: Same manufacturer as top coats.

2.02 PAINTS AND FINISHES - GENERAL

- A. Paints and Finishes: Ready mixed, unless intended to be a field-catalyzed paint.
 - 1. Provide paints and finishes of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
 - 3. Supply each paint material in quantity required to complete entire project's work from a single production run.
 - 4. Do not reduce, thin, or dilute paint or finishes or add materials unless such procedure is specifically described in manufacturer's product instructions.
- B. Volatile Organic Compound (VOC) Content:
 - 1. Provide paints and finishes that comply with the most stringent requirements specified in the following:
 - a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
 - b. Ozone Transport Commission (OTC) Model Rule, Architectural, Industrial, and Maintenance Coatings; www.otcair.org; specifically:
 - 1) Opaque, Flat: 50 g/L, maximum.
 - 2) Opaque, Nonflat: 150 g/L, maximum.
 - 3) Opaque, High Gloss: 250 g/L, maximum.
 - 4) Varnishes: 350 g/L, maximum.
 - 2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.
 - 3. Provide tints and colorants that will not add VOCs to specified products.

2.03 PAINT SYSTEMS - INTERIOR

- A. Paint I-OP - Interior Surfaces to be Painted, Unless Otherwise Indicated: Including gypsum board, concrete, concrete masonry units, wood, and plaster.
 - 1. Two top coats and one coat primer.
 - 2. Top Coat(s): High Performance Architectural Interior Latex; High Performance locations as scheduled.
 - a. Products:
 - 1) Sherwin-Williams Pre-Catalyzed Waterbased Epoxy, Eg-Shel.
 - 2) Corotech Pre-Catalyzed Waterborne Epoxy Eggshell V342
 - 3. Top Coat(s): Institutional Low Odor/VOC Interior Latex; Typical finish unless otherwise indicated.
 - a. Products:
 - 1) Sherwin-Williams ProMar 200 Zero VOC Interior Latex, Eg-Shel.
 - 2) Benjamin Moore Ultra Spec 500 Latex Eggshell N538
 - 4. Top Coat Sheen:
 - a. Eggshell: MPI gloss level 3; use this sheen for ceilings, overhead surfaces and wall surfaces.
 - 5. Primer: As specified under "PRIMERS" below.
- B. Paint I-OP-MD-DT - Medium Duty Door/Trim: For surfaces subject to frequent contact by occupants, including metals and wood:
 - 1. Medium duty applications include doors, door frames, railings, handrails, guardrails, and balustrades.
 - 2. Two top coats and one coat primer.
 - a. Products:
 - 1) Sherwin-Williams Pro Industrial WB Alkyd Urethane Enamel,semi-gloss B53-1150
 - 2) Corotech Waterborne Urethane Gloss V540
- C. Paint I-TR -W - Transparent Finish on Wood.
 - 1. 2 top coats over stain and sealer.
 - 2. Stain: Semi-Transparent Stain for Wood.
 - a. Products:
 - 1) Sherwin-Williams Wood Classics 250 VOC Oil Stain.
 - 2) Lenmar Waterborne Interior Wiping Stain 1WB.1300 .
 - 3. Sealer: Alkyd, Sanding Sealer, Clear.
 - a. Products:
 - 1) Sherwin-Williams Wood Classics FastDry Sanding Sealer.
 - 2) Benwood Stays Clear Acrylic Polyurethane - Low Lustre (423).
 - 4. Top Coat(s): Clear Water Based Varnish.
 - a. Products:
 - 1) Sherwin-Williams Wood Classics Waterborne Polyurethane Varnish, Satin.
 - 2) Lenmar Waterborne Aqua-Plastic Urethane Satin, 1WB.1427 .

2.04 PRIMERS

- A. Primers: Provide the following unless other primer is required or recommended by manufacturer of top coats.
 - 1. Interior/Exterior Latex Block Filler.
 - a. Products:

- 1) Sherwin-Williams PrepRite® Block Filler, B25W25.
- 2) Corotech Acrylic Block Filler V114
2. Interior Drywall Primer Sealer.
 - a. Products:
 - 1) Sherwin-Williams ProMar Latex 200 Primer .
 - 2) Benjamin Moore Ultra Spec 500 Interior Latex Primer N534
3. Interior Rust-Inhibitive Water Based Primer.
 - a. Products:
 - 1) Sherwin-Williams Pro Industrial Pro-Cryl® Primer, B66-310 Series.
 - 2) Corotech Prep All Universal Metal Primer V132
4. Bonding Primer, Water Based.
 - a. Products:
 - 1) Sherwin-Williams Extrem Bond Primer.
 - 2) Benjamin Moore Super Spec HP Acrylic Metal Primer P04

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin application of paints and finishes until substrates have been properly prepared.
- B. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- C. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially effect proper application.
- D. Test shop-applied primer for compatibility with subsequent cover materials.
- E. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture content of surfaces are below the following maximums:
 1. Gypsum Wallboard: 12 percent.
 2. Plaster and Stucco: 12 percent.
 3. Masonry, Concrete, and Concrete Masonry Units: 12 percent.
 4. Interior Wood: 15 percent, measured in accordance with ASTM D4442.
 5. Concrete Floors and Traffic Surfaces: 8 percent.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or repair existing paints or finishes that exhibit surface defects.
- D. Remove surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of water and bleach. Rinse with clean water and allow surface to dry.

G. Concrete:

1. Remove release agents, curing compounds, efflorescence, and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces to be coated exceeds that permitted in manufacturer's written instructions.
2. Prepare surface as recommended by top coat manufacturer and according to SSPC-SP 13.

H. Masonry:

1. Remove efflorescence and chalk. Do not coat surfaces if moisture content or alkalinity of surfaces or if alkalinity of mortar joints exceed that permitted in manufacturer's written instructions. Allow to dry.
2. Prepare surface as recommended by top coat manufacturer.

I. Concrete Floors and Traffic Surfaces: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.

J. Gypsum Board: Fill minor defects with filler compound. Spot prime defects after repair.

K. Plaster: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.

L. Wood Surfaces to Receive Transparent Finish: Wipe off dust and grit prior to sealing, seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after sealer has dried; sand lightly between coats. Prime concealed surfaces with gloss varnish reduced 25 percent with thinner.

M. Metal Doors to be Painted: Prime metal door top and bottom edge surfaces.

3.03 APPLICATION

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Apply products in accordance with manufacturer's written instructions.

C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.

D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

E. Apply each coat to uniform appearance in thicknesses specified by manufacturer.

F. Dark Colors and Deep Clear Colors: Regardless of number of coats specified, apply as many coats as necessary for complete hide.

G. Sand wood and metal surfaces lightly between coats to achieve required finish.

H. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

I. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

J. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 FIELD QUALITY CONTROL

A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection.

3.05 CLEANING

A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.06 PROTECTION

- A. Protect finishes until completion of project.
- B. Touch-up damaged finishes after Substantial Completion.

END OF SECTION

SECTION 09 3000

TILING

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Refer to Scope Information Sheets for this contract bound in the Project Manual under Section 01 1000, Summary of Work. The Scope Information Sheets describe generally the work included in each contract, but the work is not necessarily limited to that described.
- B. Cleavage membrane for floor and wall tile.
- C. Tile for floor applications.
- D. Tile for wall applications.
- E. Cementitious backer board as tile substrate.
- F. Stone thresholds.
- G. Ceramic trim.

1.2 RELATED REQUIREMENTS

- A. Section 03 5400 - Cast Underlayment.
- B. Section 07 9513 - Expansion Joint Cover Assemblies: Expansion joint components.
- C. Section 07 1200 - Built-Up Bituminous Waterproofing.
- D. Section 07 1300 - Sheet Waterproofing.
- E. Section 07 1400 - Fluid-Applied Waterproofing.
- F. Section 07 9005 - Joint Sealers.
- G. Section 09 2400 - Cement Plastering: Lath and Portland cement scratch coat, where required by the TCNA (HB) Method specified.
- H. Section 09 2116 - Gypsum Board Assemblies: Installation of tile backer board.
- I. Section 22 4000 - Plumbing Fixtures: Shower receptor.

1.3 REFERENCE STANDARDS

- A. ANSI A108/A118/A136.1 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium); 2013.1.
 - 1. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar; 2014.
 - 2. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
 - 3. ANSI A108.1c - Specifications for Contractors Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Bed with Dry-Set or Latex-Portland Cement; 1999 (Reaffirmed 2010).
 - 4. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive; 2009 (Revised).
 - 5. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).

6. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy; 1999 (Reaffirmed 2010).
7. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout; 1999 (Reaffirmed 2010).
8. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout; 1999 (Reaffirmed 2010).
9. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework; 1999 (Reaffirmed 2010).
10. ANSI A108.11-SystemDeleted - American National Standard for Interior Installation of Cementitious Backer Units; 2010 (Revised).
11. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior glue plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
12. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone; 2005 (Reaffirmed 2010).
13. ANSI A118.1 - American National Standard Specifications for Dry-Set Cement Mortar; 2012 (Revised).
14. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy Adhesive; 2013 (Revised).
15. ANSI A118.4 - American National Standard Specifications for Modified Dry-Set Cement Mortar; 2012 (Revised).
16. ANSI A118.5 - American National Standard Specifications for Chemical Resistant Furan Mortars and Grouts for Tile Installation; 1999 (Reaffirmed 2010).
17. ANSI A118.6 - American National Standard Specifications for Standard Cement Grouts for Tile Installation; 2010 (Revised).
18. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation; 2010 (Revised).
19. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2016).
20. ANSI A118.8 - American National Standard Specifications for Modified Epoxy Emulsion Mortar/Grout; 2012.1.
21. ANSI A118.9-SystemDeleted - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units; 1999 (Reaffirmed 2010).
22. ANSI A118.10 - American National Standard Specifications for Load Bearing, Bonded, Waterproof Membranes For Thin-Set Ceramic Tile And Dimension Stone Installation; 2014.
23. ANSI A118.11 - American National Standard Specifications for EGP (Exterior glue plywood) Latex-Portland Cement Mortar; 1999 (Reaffirmed 2010).
- B. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-set Ceramic Tile and Dimension Stone Installation; 2014.
- C. ANSI A118.13 - American National Standard Specifications for Bonded Sound Reduction Membranes for Thin-Set Ceramic Tile Installation; 2014.
- D. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2012.
- E. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar; 2012.

1. ANSI A136.1 - American National Standard for Organic Adhesives for Installation of Ceramic Tile; 2008 (Reaffirmed 2013).
 2. ANSI A137.1 - American National Standard Specifications for Ceramic Tile; 2013.1.
 3. ANSI A137.3 - American National Standard Specifications for Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs; 2017.
 4. ASTM C373 - Standard Test Method for Water Absorption, Bulk Density, Apparent Porosity, and Apparent Specific Gravity of Fired Whiteware Products, Ceramic Tiles, and Glass Tiles; 2014a.
- F. ASTM C847 - Standard Specification for Metal Lath; 2014a.
- G. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation; 2015.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by affected installers.

1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, ceramic accessories, and setting details.
- D. Samples: Mount tile and apply grout on two plywood panels, minimum 18 by 18 inches in size illustrating pattern, color variations, and grout joint size variations.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
1. See Section 01 6000 - Product Requirements, for additional provisions.
 2. Extra Tile: 1 percent of each size, color, and surface finish combination.
 3. Extra Tile: 10 square feet of each size, color, and surface finish combination.
- H. LEED Submittal: Documentation of recycled content and location of manufacture.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

1.7 FIELD CONDITIONS

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

PART 2 PRODUCTS

2.1 TILE

- A. Manufacturers: All products by the same manufacturer.
1. American Olean Corporation: www.americanolean.com/#sle.
 2. Dal-Tile Corporation: www.daltile.com/#sle.
 3. Emser Tile, LLC: www.emser.com/#sle.
 4. Summitville Tiles, Inc: www.summitville.com.

5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Ceramic Mosaic Tile, Type CWT-1: ANSI A137.1, standard grade.
 1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 2. Size: 6 by 6 inch, nominal.
 3. Shape: Square.
 4. Edges: Cushioned.
 5. Surface Finish: Unglazed.
 6. Color(s): As indicated on drawings.
 7. Pattern: As indicated on drawings.
 8. Products:
 - a. American Olean Series: Matte.
 - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Ceramic Mosaic Tile, Type CWT-2: ANSI A137.1, standard grade.
 1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
 2. Size: 6 by 6 inch, nominal.
 3. Shape: Square.
 4. Edges: Cushioned.
 5. Surface Finish: Glazed.
 6. Color(s): As indicated on drawings.
 7. Pattern: As indicated on drawings.
 8. Products:
 - a. American Olean, Series: Bright.
 - b. Substitutions: See Section 01 6000 - Product Requirements.

2.2 TRIM AND ACCESSORIES

- A. Thresholds: 2 inches wide by full width of wall or frame opening; beveled edge on both long edges; without holes, cracks, or open seams.
 1. Thickness: 1/2 inch.
 2. Material: Marble, honed finish.
 3. Applications:
 - a. At doorways where tile terminates.
 - b. At open edges of floor tile where adjacent finish is a different height.

2.3 SETTING MATERIALS

- A. Provide setting and grout materials from same manufacturer.
- B. Latex-Portland Cement Mortar Bond Coat: ANSI A118.4.
 1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated. Use thin-set application for tiles with dimension of 15" or less for floors and walls.
 2. Products:
 - a. Custom Building Products; Versa Bond Professional Mortar.
 - b. ARDEX Engineered Cements; ARDEX X7 Plus
 - c. Merkrete, by Parex USA, Inc; Merkrete 710 Premium Set Plus: www.merkrete.com/#sle.
 - d. TEC, an H.B. Fuller Construction Products Brand; TEC Sturdi Flex Mortar: www.tecspecialty.com/#sle.
 - e. Substitutions: See Section 01 6000 - Product Requirements.

- C. Provide setting materials made by the same manufacturer as grout.
- D. Latex-Portland Cement Mortar Bond Coat: ANSI 118.4 and/or ANSI 118.15 .
 - 1. Applications: Use this type of bond coat where indicated and where no other type of bond coat is indicated. Use (LHT) Large n Heavy Tile Mortar for applications for tiles with dimensions over 15”for floors and walls.
 - 2. Products:
 - a. Custom Building Products; Pro-Lite Premium LHT Mortar.
 - b. ARDEX Engineered Cements; ARDEX N 23 MICROTEC: www.ardexamericas.com.
 - c. LATICRETE International, Inc; LATICRETE 254 Platinum/Tri-Lite www.laticrete.com/#sle.
 - d. [Merkrete, by Parex USA, Inc; Merkrete 820 Merlite www.merkrete.com/sle](http://www.merkrete.com/sle).
 - e. ProSpec, an Oldcastle brand; Permalastic System: www.prospec.com.
 - f. Substitutions: See Section 01 6000 - Product Requirements.
- E. Organic Adhesive: ANSI A136.1,mastic type.
 - 1. Applications: wall tile.
 - 2. Use Type I in areas subject to prolonged moisture exposure.
 - 3. Products:
 - a. ARDEX Engineered Cements; ARDEX D14: www.ardexamericas.com/#sle.
 - b. Bostik Inc; www.bostik.com.
 - c. Custom Building Products; ReliaBond Ceramic Tile Adhesive - Type 1: www.custombuildingproducts.com/#sle.
 - d. LATICRETE International, Inc; LATICRETE 15 Premium Mastic: www.laticrete.com/#sle.
 - e. Merkrete, by Parex USA, Inc; Merkrete Merstik: www.merkrete.com/#sle.
 - f. ProSpec, an Oldcastle brand; B-4050 Multi-Purpose Adhesive: www.prospec.com.
 - g. Substitutions: See Section 01 6000 - Product Requirements.

2.4 ADHESIVE MATERIALS

- A. Manufacturers:
 - 1. Custom Building Products: www.custombuildingproducts.com
 - 2. Bonsal American, Inc: www.prospec.com
 - 3. Bostik Inc: www.bostik-us.com.
 - 4. Mapei Corporation: www.mapei.com.
 - 5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Organic Adhesive: ANSI A136.1, thinset bond type; use Type I in areas subject to prolonged moisture exposure.
- C. Mortar Bed Materials: Portland cement, sand, latex additive, and water.
- D. Mortar Bond Coat Materials:
 - 1. Dry-Set Portland Cement type: ANSI A118.1.
 - 2. Latex-Portland Cement type: ANSI A118.4.

2.5 GROUTS

A. Manufacturers:

1. ARDEX Engineered Cements; www.ardexamericas.com/#sle.
2. [ProSpec, an Oldcastle brand; www.prospec.com](http://www.prospec.com).
3. [Bonsal American, Inc; ProSpec; www.prospec.com](http://www.prospec.com)
4. Bostik Inc; www.bostik-us.com/#sle.
5. [LATICRETE International, Inc; www.laticrete.com/#sle](http://www.laticrete.com/#sle).
6. [Merkrete, by Parex USA, Inc; www.merkrete.com/#sle](http://www.merkrete.com/#sle).
7. [Custom Building Products; www.custombuildingproducts.com](http://www.custombuildingproducts.com).
8. Substitutions: See Section 01 6000 - Product Requirements.

B. Standard Grout: ANSI A118.6 standard cement grout.

1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
3. Color(s): As selected by Architect from manufacturer's full line.
4. Color(s): As indicated on drawings.
5. Products.
6. Thickness: 25 mils, minimum, dry film thickness.
7. Products:
 - a. Custom Building Products; Poly Blend.
 - b. LATICRETE International, Inc; LATICRETE 1500 Sanded Grout: www.laticrete.com/#sle.
 - c. Merkrete, by Parex USA, Inc; Merkrete Duracolor Non-Sanded Grout: www.merkrete.com/#sle.
 - d. ProSpec, an Oldcastle brand; ProColor Sanded Tile Grout: www.prospec.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.

C. High Performance Grouts; A118.7-

1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
3. Color(s): As selected by Architect from manufacturer's full line.
4. Color(s): As indicated on drawings.
5. Products:
 - a. Custom Building Products; Prism Ultimate Grouts
 - b. LATICRETE International, Inc; LATICRETE PermaColor Grouts: www.laticrete.com/#sle.
 - c. Merkrete, by Parex USA, Inc; Merkrete Versatile Color /XF www.merkrete.com/#sle.
6. Colors: To be selected by Architect from manufacturer's full range.

2.6 THICK-BED MATERIALS

A. Mortar Bed Materials: Portland cement, sand, latex additive, and water.

1. Products:
 - a. Custom Building Products; Thick Bed Mortar

- b. www.laticrete.com.
 - c. Merkrete, by Parex USA, Inc.; Merkrete Underlay C: www.merkrete.com.
 - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cleavage Membrane: No. 15 asphalt saturated felt.
- C. Metal Lath: ASTM C 847, Flat diamond mesh, of weight to suit application, galvanized finish.

2.7 ACCESSORY MATERIALS

- A. Waterproofing Membrane at Floors: Specifically designed for bonding to cementitious substrate under thick mortar bed or thin-set tile; complying with ANSI A118.10.
- 1. Material: Synthetic rubber.
 - 2. Thickness: 25 mils, minimum, dry film thickness.
 - 3. Products:
 - a. Custom Building Products; Red Gard www.custombuildingproducts.com
 - b. ARDEX Engineered Cements; ARDEX 8+9: www.ardexamericas.com.
 - c. LATICRETE International, Inc; LATICRETE HYDRO BAN: www.laticrete.com.
 - d. Merkrete, by Parex USA, Inc.; Merkrete Hydro Guard 2000: www.merkrete.com.
 - e. Substitutions: See Section 01 6000 - Product Requirements.
- B. Underlayment at Floors: Specifically designed for bonding to thin-set setting mortar; not primarily a waterproofing material and having the following characteristics:
- 1. Sound Reduction: Comply with ANSI A118.13, bonded membrane.
- C. Patching Materials for walls: Specifically designed to fill depressions and or uneven spots on block walls prior to thin-set application of tiles.
- 1. Manufacturers:
 - a. Custom Building Products; Custom Tech Silk
- D. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 1/2 inch thick; 2 inch wide coated glass fiber tape for joints and corners.
- E. Backer Board: High density polystyrene with reinforced cementitious coating on both sides; with compatible alkaline resistant joint tape; to be covered with waterproofing prior to installation of tile.
- 1. Thickness: 1/2 inch.
 - 2. Products:
 - a. Refer to section 09 2116 Gypsum Board Assemblies.
- F. Grout Sealant: Manufacturer's standard product for sealing grout joints that does not change color or appearance of grout.
- 1. Aqua Mix; Grout and Tile Sealer// Sealers Choice Gold.
 - 2. Bonsal American, Inc.: Grout Sealer.
 - 3. Bostik: CeramaSeal Grout Sealer.
 - 4. C-Cure: Penetrating Sealer 978.
 - 5. MAPEI Corporation: KER 003, Silicone Spray Sealer for Cementitious Tile Grout.
 - 6. Summitville Tiles, Inc.: SL-15, Invisible Seal Penetrating Grout and Tile Sealer.
 - 7. TEC Specialty Products, Inc.; TA-256 Penetrating Silicone Grout Sealer.
- G. Heavy-duty, non-staining construction paper with compatible adhesive tape.
- H. Neutral Cleaner:
- 1. Hillyard Super Shine-All.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive tile.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- C. Verify that subfloor surfaces are dust free and free of substances that could impair bonding of setting materials to subfloor surfaces.
- D. Verify that concrete sub-floor surfaces are ready for tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by tile manufacturer and setting materials manufacturer.
- E. Verify that required floor-mounted utilities are in correct location.

3.2 PREPARATION

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install cementitious backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of dry-set mortar to a feather edge.
- E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.3 INSTALLATION - GENERAL

- A. Install tile and thresholds and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.13, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install thresholds where indicated.
- G. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.
- L. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.4 INSTALLATION - FLOORS - MORTAR BED METHODS

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F112-19, Direct Bond mud bed.
 - 1. For areas where slab is depressed
 - 2. Porcelain Tile Type: PFT-1
 - 3. (LHT Mortar) bond coat for 12x24 tiles
 - 4. Specified grouts- ANSI 118.6 and/or 118.7
- ~~B.~~ Over interior floors where crack isolation maybe needed, install in accordance with TCNA Method F125-19.
 - 1. Porcelain Tile Type: PFT-1
 - 2. (LHT Mortar) bond coat for 12x24 tiles.
 - 3. Specified grouts- ANSI 118.6 and/or 118.7
- C. Over above grade floors where waterproofing is needed, install in accordance with TCNA F122A-19, Waterproofing Membrane.
 - 1. Porcelain Tile Type: PFT-1
 - 2. (LHT Mortar) bond coat for 12x24 tiles.
 - 3. Specified grouts- ANSI 118.6 and/or 118.7

3.5 INSTALLATION - WALL TILE

- A. Over interior walls with wood or metal studs and cementitious backer units install in accordance with TCNA W244C-19
 - 1. Ceramic Tile type: CWT-1 and CWT-2
 - 2. Thin-Set as bond coat for tiles under 15”.
 - 3. Specified grouts- ANSI 118.6 and/or 118.7
- B. Over existing Masonry or block walls; W202I-19 –Ceramic Tile
 - 1. Ceramic Tile type: CWT-1 and CWT-2
 - 2. Thin-Set as bond coat for tiles under 15”
 - 3. Specified grouts- ANSI 118.6 and/or 118.7

3.6 GROUTING

- A. Follow grout manufacturer's recommendations as to grouting procedures and precautions.
- B. Remove all grout haze, observing both tile and group manufacturer's recommendations as to use of acid and chemical cleaners.
- C. Rinse tile work thoroughly with clean water before and after chemical cleaners.
- D. Polish surface of tile work with soft cloth.
- E. Seal finished grout lines with sealer, applied following directions by the manufacturer.

3.7 CLEANING

- A. Clean tile and grout surfaces.

3.8 PROTECTION

- A. Apply a protective coat of neutral cleaner solution, 1 part cleaner to 1 part water, or as specified by manufacturer's instructions, to completed tile floors.
- B. Cover all tile floors with heavy-duty, non-staining construction paper, taped in place.
- C. Prior to final acceptance of tile work, remove paper and rinse protective coat of neutral cleaner from all tile surfaces.
- D. Do not permit traffic over finished floor surface for 7 days after installation.

END OF SECTION