



PROJECT MANUAL

PENTLAND HILLS
BUILDING O INTERIOR REFRESH
PROJECT NO. 958912
CONTRACT NO. 95891 2-EDPALT-2026-34





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SECTION 02 4100
DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes complete demolition of designated structures; demolition of foundations and slabs-on-grade; disconnecting and capping and demolition of identified utilities; and demolition of underground tanks and piping; removing demolished materials from site; protection of items to remain as indicated on the Drawings, salvage items as indicated to be retained by the University.
- B. Related Sections
 - 1. Section 01 31 19: Project Meetings
 - 2. Section 01 50 00: Temporary Facilities
 - 3. Section 01 73 29: Cutting and Patching
 - 4. Section 01 77 19: Closeout Requirements

1.2 PROJECT SITE CONDITIONS

- A. The Drawings may not indicate in detail all demolition work to be carried out. Contractor shall carefully examine all existing work to determine the full extent of demolition for the completed Work to conform to the Drawings and Specifications.
- B. Existing work damaged during and by demolition operations shall be repaired or replaced to the satisfaction of the Architect and at no cost to the University.
- C. Contractor shall be solely responsible for damage resulting from inadequate or improper construction, shoring, bracing or support procedures.
- D. Notify Architect immediately for further instructions, should materials, systems, or conditions differ from those indicated on the Drawings.

1.3 PROJECT RECORD DOCUMENTS

- A. Accurately record actual locations of capped utilities, subsurface and obstructions.

1.4 QUALIFICATIONS

- A. Demolition Firm: Company specializing in performing the Work of this Section with minimum 5 years documented experience.

1.5 COORDINATION

- A. Prior to commencement of Work of this Section, contact the University to confirm that all items identified as University property have been removed or clearly marked.
- B. Coordinate demolition with other trades and/or contractors to ensure correct sequence, limits, and methods of proposed demolition. Schedule work to create the least possible inconvenience to the operation of the facility.



PART 2 PRODUCTS

2.1 HANDLING OF MATERIALS

- A. All existing items to be reused or retained by the University shall be removed by use of proper tools to insure against damage.
- B. Salvaged items to be retained by the University and not incorporated into the Work shall be delivered to the University, cleaned, packaged and labeled, unless otherwise instructed by the University.
- C. Items to be reused on site shall be stored on site and protected from damage, soiling, and theft/vandalism.

PART 3 EXECUTION

3.1 PREPARATION

- A. Erect and maintain temporary barriers and security devices, including warning signs and lights, and similar measures, for protection of the public, University, Contractor's employees, and existing improvements to remain prior to any demolition.
- B. Protect existing structures, furniture, appliances, and other materials not indicated to be demolished.
- C. Mark location of utilities.
- D. Provide all safeguards, including warning lights, signs, chain link fence barricades, etc., for the protection of staff and the public during demolition.

3.2 DEMOLITION REQUIREMENTS

- A. Conduct demolition to minimize interference with adjacent structures and occupancies.
- B. Conduct operations with minimum interference to public or private access. Maintain protected egress and access from adjacent structures at all times.

3.3 DEMOLITION

- A. Do not throw materials from heights. Use ramps or chutes.
- B. Remove materials to be re-installed or retained in manner to prevent damage.
- C. Continuously clean-up and remove demolished materials from site. Do not allow materials to be scavenged or accumulate on site.
- D. Remove and dispose of all materials in a manner allowed by Local, State and Federal law and regulation.
- E. Do not burn or bury materials on site. Leave site in clean condition.
- F. Remove temporary work.
- G. If demolition exceeds the limits shown on the drawings, contractor shall patch and/or repair the demolished work at no additional cost to the University.

3.4 CUTTING EXISTING CONCRETE

- A. Cutting of existing concrete shall be done by experienced workers familiar with the requirements and space necessary for placing concrete. All cutting shall be

done under the direct supervision of the Contractor. In general, cutting of concrete shall be done with concrete cutting wheels and hand chisels. Care shall be taken so as to not shatter concrete that is to remain.

- B. Any concrete removed in excess of amount indicated, specified, or required shall be replaced with concrete as directed by the Architect at the expense of the Contractor.
- C. Prior to cutting or coring of concrete, locate utilities that are concealed by the concrete and take necessary precautions to protect them.

3.5 REMOVAL OF EXISTING PLUMBING AND ELECTRICAL EQUIPMENT

- A. Contractor shall remove from designated building(s) and designated portion(s) of the site all existing plumbing and electrical equipment, fixtures and services not reserved for reuse and not necessary for completion of Work.

3.6 CLEANING

- A. Clean all existing materials to remain, using skilled and experienced workers under continual supervision, using appropriate materials and tools.
- B. Protect all adjacent materials and equipment during cleaning function.
- C. Refer to other specifications sections for further cleaning requirements.

3.7 PATCHING

- A. Patch materials that are to remain when damaged by work. Finish material and appearance of patch or repair work shall match existing contiguous materials and finishes in all respects, per the Architect.

3.8 CLEAN-UP / DISPOSAL

- A. The parking of trucks at the building shall be coordinated with the University.
- B. Debris shall be conveyed by trucks designed to transport rubbish and debris. Trucks shall be covered during transport.
- C. Contractor to pay all dump/disposal fees.
- D. Contractor to dispose of all debris in a manner allowed by Local, State and Federal regulations/requirements.
- E. Debris shall be dampened by fog water spray when it is transported from its location to truck. Amount of water shall be controlled to insure against water ponding at the area of debris pick-up.
- F. The debris pick-up area shall be kept broom-clean and shall be flushed with clean water when necessary to remove soil.
- G. Debris, waste, and removed materials, other than items to be salvaged, are Contractor's property for legal disposal off the site. Continuously clean-up and remove these items and do not allow to accumulate in the building(s) and on the site.

END OF SECTION

SECTION 03 5416**HYDRAULIC CEMENT UNDERLAYMENT****PART 1 GENERAL**

1.1 SUMMARY

- A. This section includes a lightweight, fast-setting, Portland cement-based system for filling indoor concrete prior to the installation of a leveling course.

1.2 REFERENCES

- A. ASTM C 109M, Compressive Strength Air-Cure Only
- B. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's product data and installation instructions for each material and product used.
- B. Qualification Data: For Installer.

1.4 WARRANTY

- A. Provide and install system in accordance with standard manufacturer warranty.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products in original packaging, labeled with product identification, manufacturer, batch number, and shelf life.
- B. Store products in a dry area with temperature maintained between 50° and 85° F (10° and 29° C) and Protect from direct sunlight.
- C. Handle products in accordance with manufacturer's printed recommendations.

1.6 PROJECT CONDITIONS

- A. Do not install material below 50° F (10° C) surface and air temperatures. These temperatures must also be maintained during and for 48 hours after the installation of products included in this section. Install quickly if substrate is warm and follow warm weather instructions available from manufacturer.

PART 2 PRODUCTS

2.1 HYDRAULIC CEMENT UNDERLAYMENT

- A. Basis of Design: ARDEX LW Lightweight, Fast-Setting, Concrete Fill System
1. Primer Standard Porous Concrete: ARDEX P 51™ Primer diluted 1:1 with water.
 2. Extremely Absorbent Concrete: ARDEX P 51™ Primer double priming method

3. Performance and Physical Properties: Meet or exceed the following values for material cured at 73° F +/-3°F (23° C +/-3°C) and 50% +/-5% relative humidity:
 - a. Coverage: A 50 lb bag of ARDEX K 520 mixed with 1:1 ratio (approx. 5 gallons / 19 L) ELEMIX beads yields approx. 1 cu. ft of fill.
 - b. Initial Set: Approx. 15 mins ASTM C191.
 - c. Final Set: Approx. 1 hour ASTM C191.
 - d. Compressive Strength (ASTM C109/mod Air cure only after 28 days):
 - (1) ARDEX K 15: 5,500 psi (386 kg/cm²)
- B. Basis of Design: ARDEX K 15 Self-Leveling Underlayment
 1. Primer for the smoothing course: ARDEX P 51™ Primer diluted 1:1 with water.

2.2 WATER

- A. Use clean, potable, and sufficiently cool water (not warmer than 70° F).

PART 3 EXECUTION

3.1 PREPARATION

- A. Concrete Subfloors:
 1. Prepare substrate in accordance with manufacturer's instructions.
 2. Prior to proceeding please refer to ASTM F710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring. All concrete subfloors must be sound, solid, clean, and free of all oil, grease, dirt, curing compounds and any substance that might act as a bond breaker before priming. Mechanically clean if necessary using shot blasting or other. Acid etching and the use of sweeping compounds and solvents are not acceptable.
 3. Substrates shall be inspected in accordance with ASTM F2170 and corrected for moisture or any other conditions that could affect the performance of the underlayment or the finished floor covering.
- B. Crack and Joint Preparation:
 1. Moving Joints and Moving Cracks – honor all expansion, isolation joints and moving cracks up through the underlayment. A flexible sealing compound such as ARDEX ARDISEAL™ Rapid Plus Semi-Rigid Joint Sealant may be installed.
 2. Saw Cuts and Control Joints – fill all dormant control joints and dormant cracks with ARDEX ARDIFIX™ Low Viscosity Rigid Polyurethane Crack & Joint Repair or ARDEX FEATHER FINISH® Self-Drying, Cement-Based Finish Underlayment as recommended by the manufacturer.

3.2 APPLICATION

- A. Examine substrates and conditions under which materials will be installed. Do not proceed with installation until unsatisfactory conditions are corrected.

- B. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.
- C. Priming: Comply with manufacturer's printed instructions.
- D. Mixing: Comply with manufacturer's printed instructions.
- E. Preparation for Smoothing Course: Comply with manufacturer's printed instructions and the following.
 - 1. The ARDEX LW base is not intended to be used for the direct installation of flooring. This layer must be topped with a minimum of 1/4" of ARDEX K 15 prior to the installation of finish floor covering. To prepare the surface to receive the smoothing layer, any loose or exposed ELEMIX beads should be removed from the surface of the deep fill layer. If needed, lightly sand the surface once it has cured for 12 – 16 hours. Once sanded, vacuum the surface thoroughly to remove all loose material. There should always be cement paste at the surface and all beads should be encapsulated. The removal of all loose beads will produce a more solid surface to receive the primer and smoothing course.
- F. Thickness of Installation:
 - 1. The ARDEX LW™ system can be installed from 3/4" (18 mm) to virtually any thickness in one application. Remember to leave the topping thickness at least 1/4" – 1/2" (6 – 12 mm) below the finished elevation to account for the smoothing course.
- G. Smoothing Course:
 - 1. Prime the surface of the prepared ARDEX LW deep fill layer with ARDEX P 51 Primer diluted 1:1 with water in accordance with the technical data sheet. Allow to dry to a clear, thin film (min. 30 mins, max. 24 hours). Underlayment shall not be applied until the primer is dry.
 - 2. Install the neat layer of ARDEX K 15 in accordance with the appropriate technical data sheet. This neat layer must be installed at least 1/4" (6 mm) thick. The finish flooring can be installed once the selected self-leveling underlayment has cured in accordance with its technical data sheet.

3.3 FIELD QUALITY CONTROL

- A. Where specified, field sampling of the underlayment is to be done by taking an entire unopened bag of the product being installed to an independent testing facility to perform compressive strength testing in accordance with ASTM C 109/modified: air-cure only. There are no in situ test procedures for the evaluation of compressive strength.

3.4 PROTECTION

- A. Prior to the installation of the finish flooring, the surface of the underlayment should be protected from abuse by other trades by the use of plywood, Masonite or other suitable protection course.

END OF SECTION

SECTION 07 9200**JOINT SEALANTS****PART 1 GENERAL**

1.1 SUMMARY

- A. Section Includes: Sealants and caulking as indicated on the Drawings and as specified, including the following:
 - 1. Preparing sealant substrate surfaces.
 - 2. Sealant and backing.
- B. Related Sections
 - 1. Section 07 8400: Firestopping
 - 2. Section 09 2900: Gypsum Board
 - 3. Section 09 3000: Tiling

1.2 REFERENCES

- A. ASTM C510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
- B. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of a Durometer.
- C. ASTM C719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
- D. ASTM C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants.
- E. ASTM C834 - Standard Specification for Latex Sealing Compounds.
- F. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications.
- G. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- H. ASTM C1193 - Standard Guide for Use of Joint Sealants.
- I. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
- J. ASTM C1311 - Specification for Solvent Release Sealants.
- K. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
- L. ASTM D 624 - Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers.
- M. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.

- N. ASTM D1056 - Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber.
- O. ASTM D2203 - Standard Test Method for Staining from Sealants.
- P. ASTM D2240 - Test Method for Rubber Property - Durometer Hardness.
- Q. ASTM E283 - Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
- R. ASTM E331 - Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference.
- S. NSF International (NSF): Standard 51- Food Equipment Materials.
- T. Sealant, Waterproofing, and Restoration Institute (SWRI): SWRI Validation Program.
- U. U. S. Environmental Protection Agency (EPA): 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings.
- V. U.S. Food and Drug Administration (FDA): 21 CFR 177.2600 - Title 21 Part 177 Indirect Food Additives: Polymers.
- W. US Green Building Council (USGBC): Leadership in Energy and Environmental Design (LEED) Green Building Rating System

1.3 QUALITY ASSURANCE

- A. For each type of material specified, use products of a single manufacturer, unless otherwise directed by the Architect.
- B. Field adhesion tests, as specified in this Section, shall be reviewed and approved by an authorized sealant manufacturer's representative prior to commencing installation.
- C. Conform to SWRI (Sealant, Waterproofing and Restoration Institute) requirements for materials and installation.

1.4 SUBMITTALS

- A. Make submittals in compliance with Section 01 3300.
- B. Manufacturer's product data for each type of sealant/caulking required.
- C. Joint Sealant Schedule: Indicate joint sealant location, joint sealant type, manufacturer and product name, and color, for each application. Utilize joint sealant designations included in this Section.
- D. Samples: Submit physical samples of the standard colors available for each sealant material intended for installation in an exposed location.
- E. Certificates: Submit certificate that the materials specified and proposed for use are suitable for intended application, and that the materials comply with local VOC regulations.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum 5 years documented experience.

- B. Applicator: Applicators shall be thoroughly trained and experienced in the necessary skills and be thoroughly familiar with the specified requirements and shall have a minimum of 5 years experience installing caulking and sealants.

1.6 PROJECT CONDITIONS

- A. Environmental Conditions: Do not proceed with installation of sealants/caulking under the following conditions:
1. When ambient and substrate temperature exceed limits permitted by the sealant/caulking manufacturer.
 2. When joint substrates are wet or retaining moisture.

1.7 COORDINATION

- A. Coordination requirements: Comply with Section 01 3119.
- B. Coordinate the work with all sections referencing this section.

1.8 WARRANTY

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, watertight seal, and exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.1 SEALANTS

- A. Type A Sealant: Single component, non-sag, neutral-curing silicone joint sealant conforming to ASTM C920, Type S, Grade NS, Class 100/50.
1. Basis of Design Product: DOWSIL™ 790 Silicone Building Sealant.
 2. Hardness, ASTM C 661: 15 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 26 g/L maximum.
 4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
 5. Color: As selected by Architect from manufacturer's full line of colors.
- B. Type B Sealant: Mildew-resistant, single-component, non-sag, acid-curing silicone joint sealant, ASTM C920, Type S, Grade NS, Class 25.
1. Basis of Design Product: DOWSIL™ 786 Silicone Sealant.
 2. Hardness, ASTM D2240: 25 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 36 g/L maximum.
 4. NSF Standard 51 and FDA Regulation No. 21 CFR 177.2600 compliant.
 5. Color: As selected by Architect from manufacturer's standard colors.
- C. Type C (Acoustical) Sealant:
1. Tape: Polyvinylchloride foam tape with pressure sensitive adhesive on one side, 3/4" wide by the thickness required to accommodate unevenness of substrate and completely fill openings between partition framing and building floors and concrete or masonry walls.

2. Compound: Latex acrylic based sealant conforming to ASTM C834, Type S, Grade NS, Class 7.5, non-hardening, non-corrosive, as recommended by manufacturer for acoustical applications.
- D. Type D Sealant: Single-component, non-sag, neutral-curing silicone joint sealant, ASTM C920, Type S, Grade NS, Class 50.
1. Basis of Design Product: DOWSILTM 756 SMS Building Sealant.
 2. Hardness, ASTM C 661: 35 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 60 g/L maximum.
 4. Staining, ASTM C 1248: None on white marble.
 5. Color: As selected by Architect from manufacturer's full line of colors.
- E. Type E Sealant: Single-component, non-sag, neutral-curing silicone joint sealant, ASTM C920, Type S, Grade NS, Class 50.
1. Basis of Design Product: DOWSILTM 791 Silicone Weatherproofing Sealant.
 2. Hardness, ASTM C 661: 34 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 30 g/L maximum.
 4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
 5. Color: As selected by Architect from manufacturer's full line of colors.
- F. Type F Sealant: Single-component, non-sag, neutral-curing silicone joint sealant, ASTM C920, Type S, Grade NS, Class 50.
1. Basis of Design Product: DOWSILTM 795 Silicone Building Sealant.
 2. Hardness, ASTM C 661: 35 - 45 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 32 g/L maximum.
 4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
 5. Color: As selected by Architect from manufacturer's full line of colors.
- G. Type G Sealant: Single-component, non-sag, neutral-curing silicone joint sealant, ASTM C920, Type S, Grade NS, Class 50.
1. Basis of Design Product: DOWSILTM 791 Silicone Weatherproofing Sealant.
 2. Hardness, ASTM C 661: 34 durometer Shore A.
 3. Volatile Organic Compound (VOC) Content: 30 g/L maximum.
 4. Staining, ASTM C 1248: None on concrete, granite, limestone, and brick.
 5. Color: As selected by Architect from manufacturer's full line of colors.
- H. Type H Sealant: Butyl-rubber-based joint sealant.
- I. Type I Sealant: Single component polyurethane- or polysulfide-based sealant conforming to ASTM C920, Grade NS, Class 25, non-sag, as recommended by manufacturer for continuous water immersion.

2.2 MISCELLANEOUS MATERIALS

- A. Backer Rod

1. Material: Closed-cell foam, nonstaining, resilient material such as neoprene, butyl, polyethylene, or polyurethane, compatible with sealant to be used.
 2. Sized and shaped to control depth of sealant and to provide 20% to 50% compression upon insertion.
 3. At joints in floors and walks subject to foot traffic, use 9 pound density backer rod. Backer rod shall contact surface at bottom of joint. If distance to bottom of joint makes it infeasible for backer rod to make contact with a surface, install epoxy ledge on side(s) of joint substrate to support backer rod.
- B. Joint Cleaner
1. For metal and glass: Xylol, xylene, toluol, or toluene.
 2. For removing lacquer coatings: Lacquer thinner.
- C. Primer: As recommended by sealant manufacturer for use intended.
- D. Masking Tape: Pressure-sensitive adhesive paper type.
- E. Bond Breaker: Pressure-sensitive adhesive polyethylene tape.
- F. Clean silica sand.
- 2.3 SEALANT COLORS
- A. Sealant color for use in exposed locations shall match the color of adjacent materials as closely as possible and shall be approved by the Architect prior to installation.
 - B. Wherever sealants are not exposed to view, provide manufacturer's standard color which has the best overall performance characteristics for the application indicated.
- 2.4 MIXES
- A. Mix multiple component sealers in accordance with manufacturer's instructions.
 1. Mix with mechanical mixer; prevent air entrainment and overheating.
 2. Continue mixing until color is uniform.

PART 3 EXECUTION

- 3.1 INSPECTION
- A. Inspect joints to be sealed to determine if conditions are satisfactory for the proper installation of joint sealants.
 - B. If unsatisfactory conditions exist, do not commence Work until such conditions have been corrected.
- 3.2 GENERAL
- A. The extent of joint sealant Work is not necessarily fully described as specified herein, nor necessarily fully described as indicated on the Drawings.
 - B. Provide sealants wherever required to prevent light leakage as well as moisture leakage; and at exposed joints around plumbing fixtures, door frames, at roof

conditions, and at other locations as required to facilitate cleaning and sanitation, even when not specifically indicated on the Drawings.

- C. Consult the Architect if in doubt as to whether sealant is required at a given location.

3.3 PREPARATION

- A. **Cleaning:** Clean joint surfaces, using joint cleaner as necessary, of dust, dirt, oil, grease, rust, lacquers, laitance, release agents, moisture, and other matter which could adversely affect adhesion of sealants.
- B. **Masking:** Mask areas adjacent to joints.
- C. **Priming:** Apply primer, if required, following manufacturer's printed instructions.
- D. Joints shall enclose sealant on three sides.
 1. Where adequate joints for sealants have not been provided, suitable joints shall be cleaned out to the depth required, or as indicated, and ground to a minimum width of ¼" without damage to the adjoining Work, unless otherwise specified or indicated.
 2. No grinding shall be performed on metal surfaces.

3.4 APPLICATION

- A. Install sealant and backing materials in accordance with manufacturer's instructions.
- B. Install sealers and accessories in accordance with ASTM C1193.
- C. Install acoustical sealers and accessories in accordance with ASTM C919.
- D. Install backing materials in joints using blunt instrument to avoid puncturing.
 1. Do not twist backing while installing.
 2. Install backing so that joint depth is 50% of joint width, minimum ¼" deep.
- E. Apply sealants in joints using pressure gun with nozzle cut to fit joint width.
- F. Place sealants in uniform, continuous beads without gaps or air pockets.
- G. Tool joints to required configuration within 10 minutes of sealant application.
- H. If masking materials are used, remove immediately after tooling.
- I. Seal joints adjacent to painted Work before the final coat of paint is applied.
- J. At joints subject to foot traffic, evenly sprinkle silica sand on uncured surface of sealant/caulking. After curing, sweep away excess unadhered sand.

3.5 CLEANING

- A. Remove spilled and excess materials adjacent to joints without damaging adjacent surfaces.
- B. Leave finished Work in neat, clean condition with no evidence of spillovers or damage to adjacent surfaces.

3.6 SEALANT SCHEDULE

- A. Type A
 - 1. Joints in concrete and floors and paved surfaces subject to foot traffic.
 - 2. Exterior and interior vertical joints in concrete, except as otherwise specified.
 - 3. Exterior joints in masonry.
 - 4. Exterior joints within exterior insulation finish systems (EIFS).
 - 5. Around metal frames penetrating exterior concrete and masonry surfaces.
 - 6. Exterior and interior joints in contact with organically-coated aluminum.
- B. Type B
 - 1. Interior wall penetrations for pipe and conduit that will be concealed by escutcheons and other trim and plate, and for lap joints in sheet metal.
 - 2. Joints, voids and penetrations not otherwise specified for interior surfaces exposed to view and requiring painting.
 - 3. Bedding of fixtures, partitions, equipment and accessories fastened to walls and floors, flanges and escutcheons of items penetrating surfaces in Toilet Rooms, and other areas requiring sanitary conditions to eliminate any open joints between contact surfaces.
 - 4. Tile control and expansion joints where indicated.
- C. Type C
 - 1. Perimeter joints around sound retardant partitions and electrical boxes and other penetrations in such partitions.
- D. Type D
 - 1. Exterior exposed joints in metal panel cladding systems.
- E. Type E
 - 1. Exterior concealed watertight joints in cladding systems.
- F. Type F
 - 1. Exterior joints between different materials listed above. Type D may be used in lieu of Type F for this application.
 - 2. Interior movement joints in interior unit masonry.
- G. Type G
 - 1. Interior perimeter joints of exterior and interior frames.
- H. Type H
 - 1. Interior concealed sealants at thresholds and sills.
- I. Type I
 - 1. Joints in [fountains] [water features].
- J. Conflicts

1. In the event of conflict between the above Schedule and sealant type indicated on Drawings, notify Architect.
2. Architect will determine sealant type to be installed in location in question.
3. Install sealant type directed by Architect, complete with all necessary joint preparation and accessories.

END OF SECTION

SECTION 07 8413
PENETRATION FIRESTOPPING

PART 1 GENERAL

1.1 SUMMARY

1. Penetrations for the passage of duct, cable, cable tray, conduit, piping, electrical busways and raceways through fire-rated vertical barriers (walls and partitions), horizontal barriers (floor/ceiling assemblies), and vertical service shaft walls and partitions.

B. Related Sections

1. Section 07 9200: Joint Sealants

1.2 REFERENCES

- A. ASTM E84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E119 – Standard Test Methods for Fire Tests of Building Construction and Materials.
- C. ASTM E814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops.
- D. ASTM E1399 – Standard Test Method for Cyclic Movement and Measuring Minimum and Maximum Joint Widths on Architectural Joint Systems.
- E. ASTM E1966 – Standard Test Methods for Fire-Resistive Joint Systems.
- F. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestops
- G. ASTM E2307 – Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus.
- H. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers.
- I. UL Fire Resistance Directory.
- J. UL 263 – Standard for Fire Tests of Building Construction and Materials.
- K. UL 723 – Standard for Test for Surface Burning Characteristics of Building Materials.
- L. UL 1479 – Fire Tests of Through Penetration Firestops.
- M. UL 2079 – Test for Fire Resistance of Building Joint Systems.

1.3 SYSTEM DESCRIPTION

- A. Provide fire stops and smoke seals to prevent the passage of fire, smoke, toxic gasses or water from one floor or area to another. Seal openings in floors, fire rated walls and permanent partitions penetrated by pipes, ducts, conduits and other items as shown, specified, and as required for the type of construction.

- B. Mineral fiber insulation installed as fire safing at non-rated penetrations not containing pipes, ducts, conduits, and other items in floor slabs, wall partitions, construction-joint conditions between slabs and adjacent construction and where indicated or required.
- C. Provide damming material, clips, and closures as required for support and containment of dams, and other insulation materials required for tested and rated fire stop systems.

1.4 SUBMITTALS

- A. Make submittals in compliance with Section 01 3300.
- B. Submit manufacturer's Product Data for each type of fire stop and smoke seal material proposed for installation. Indicate product characteristics, typical installations, performance, and limitation criteria and test data.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Firestop Sealant: Smoke, gas and water resistant. For use in horizontal or vertical, concrete, masonry or gypsum wall assemblies.
 - 1. Hilti: FS ONE.
- B. Acrylic based system that provides movement capability in fire rated joints and seals through penetration applications.
 - 1. Hilti: CP 606.

PART 3 EXECUTION

3.1 APPLICATION REQUIREMENTS

- A. Provide single component fire stop sealant or putty:
 - 1. Within penetrations subject to movement including conduit, cable bundles, buss duct, and noncombustible pipe.
 - 2. As a sealant or caulking for smoke barrier construction, fire, and smoke dampers, mechanical/electrical framed elements in masonry and gypsum board partition systems, and other conditions.

3.2 PREPARATION

- A. Examine the areas and conditions where fire stops and smoke seals are to be installed for conditions detrimental to the proper completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected for rated fire protection.
- B. Surface to receive fire stops or smoke seals shall be free of dirt, dust, grease, form release agents, or other matter that would impair the bond of the fire stop material to the substrate or penetrating items. Substrate shall be frost free and when required, dry.
- C. Voids and cracks in substrate shall be filled and unnecessary projections removed before installation of fire stops.
- D. Assure that all pipes, conduit, cable, and other items, which penetrate fire rated construction, have been permanently installed before installation of fire stops. Schedule and sequence the Work to assure that partitions and other

construction, which would conceal penetrations, are not installed before the installation of fire stops and smoke seals.

- E. Comply with manufacturer's recommendations for temperature and humidity conditions before, during, and after installation of fire stops and smoke seals.

3.3 INSTALLATION

- A. General: Provide installation in accordance with manufacturer's installation procedures, as required. Install fire stops in accordance with fire test reports, UL Fire Resistance Directory, Intertek Testing Services Directory or SpecDirect, and reviewed Sample installations.
- B. Installation of Single Component Fire Stop Sealant:
 - 1. Provide noncombustible insulation as required to achieve fire resistance rating.
 - 2. Install with manual or powered sealant gun. For up to four hour rating, install to the thickness required by the Listed System Designs as directed for wall and floor applications.
 - 3. Surface of gun grade fire stop sealant shall be tooled in accordance with manufacturer's recommendations.
 - 4. Remove excess materials from adjacent surfaces within 10 minutes, with either water or other material compatible with sealant and recommended by sealant manufacturer, leaving the Work in a neat, clean condition.

3.4 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

3.5 CLEANUP

- A. Clean surfaces adjacent to sealed openings and joints and remove excess of firestopping materials.
- B. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

END OF SECTION

SECTION 09 2900
GYPSUM BOARD

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes shaftwall wall system; gypsum board and joint treatment; gypsum sheathing; and textured finish.

1.2 REFERENCES

- A. ASTM C1396 - Standard Specification for Gypsum Board.
- B. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board.
- C. ASTM C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases.
- D. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber
- E. GA-201 - Using Gypsum Board for Walls and Ceilings.
- F. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 3300.
- B. Product Data: Provide data on metal framing, gypsum board and joint tape.

1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with ASTM C840.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.
- C. Reference specifications and standards:
- D. "Recommended Specifications for the Application and Finishing of Gypsum Board," Gypsum Association GA-216.
1. In case of conflict between these Specifications, applicable legal requirements and the ANSI Standards, the more restrictive requirement shall prevail.
2. Gypsum wallboard finish shall conform to requirements of "Recommended Specification for Levels of Gypsum Board Finish" of the Painting and Decorating Contractors of America, the Association of Wall and Ceiling Industries International, the Gypsum Association, and the Ceilings & Interior Systems Construction Association. Levels are described as follows:
- a. Level 0: No taping, finishing or accessories required.

- b. Level 1: All joints and interior angles shall have tape embedded in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.
- c. Level 2: All joints and interior angles shall have tape embedded in joint compound and one separate coat of joint compound applied over all joints, angles, fastener heads and accessories. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.
- d. Level 3: All joints and interior angles shall have tape embedded in joint compound and two separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compound shall be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the application of the final decoration.
- e. Level 4: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints, angles, fastener heads, and accessories. All joint compound shall be smooth and free of tool marks and ridges.
- f. Level 5: All joints and interior angles shall have tape embedded in joint compound and three separate coats of joint compound applied over all joints angles, fastener heads, and accessories. A thin skim coat of joint compound, or a material manufactured especially for this purpose, shall be applied to the entire surface. The surface shall be smooth and free of tool marks and ridges.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five years documented experience.
- B. Installer: Company specializing in performing Work of this section with minimum five years documented experience.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. United States Gypsum Corporation.
- B. Domtar Gypsum, Inc.
- C. Georgia Pacific Corporation
- D. Gold Bond - National Gypsum Corporation.

2.2 MATERIALS

- A. Standard Gypsum Board: ASTM C1396 (Section 5); 5/8 inch thick unless otherwise indicated, regular type except where 5/8 inch thick Type X fire-resistant type is indicated on the Drawings or required to meet UL, maximum available length in place; tapered edges.
- B. Moisture and Mold Resistant Gypsum Board: ASTM C1396 (Section 5); 1/2 inch thick, regular type except where 5/8 inch thick Type X fire-resistant type is

indicated on the Drawings or required to meet UL, maximum available length in place; tapered edges.

1. Provide for exposed and concealed locations at toilet rooms, janitor rooms, kitchens, and other "wet" areas except where otherwise indicated on the Drawings or otherwise specified.
2. Gypsum Ceiling Board: ASTM C1396 (Section 12), non-sag type; ½ inch thick, maximum available length in place, long edges tapered.

2.3 ACCESSORIES

- A. Corner Beads: Metal.
- B. Edge Trim: GA-201 and GA-216; Type LC bead.
- C. Joint Materials: GA-201 and GA-216; reinforcing tape, joint compound, adhesive, and water.
- D. Fasteners: ASTM C1002, Type S12.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Section 01 3119: Verification of existing conditions before starting work.
- B. Verify that site conditions are ready to receive work and opening dimensions are as indicated on shop drawings.

3.2 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with GA-201, GA-216 and manufacturer's instructions.
- B. Erect single layer board in horizontal, with ends and edges occurring over firm bearing.
- C. Use screws when fastening gypsum board to wood furring or framing.
- D. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- E. Place control joints consistent with lines of building spaces as indicated.
- F. Place corner beads at external corners. Use longest practical length. Place edge trim where gypsum board abuts dissimilar materials.
- G. Install backing board over gypsum board in accordance with manufacturer's written instructions.

3.3 JOINT TREATMENT AND FINISHING

- A. Exposed Surfaces: All internal and external corners and angles and joints between panels shall be reinforced with perforated tape and joint compound and finished as follows:
 1. Taping: Fill all corners and recesses between gypsum board panels with sufficient thickness of joint compound to completely hide board at all joints. Center tape on joint and press tightly to 2 panels using suitable tool. Lay excess compound squeezed from beneath tape smoothly on top of tape.

2. Second Coat: When first coat is dry, spread a second coat application of joint compound evenly over entire joint to beyond shoulder of recess or tape.
 3. Third Coat: When second coat is dry, apply sufficient joint compound to even up all surfaces of joint.
 - a. Provide Level 5 finish conforming to Gypsum Association GA-214 "Levels of Gypsum Board Finish."
 4. Screw Depressions: Apply at least 2 coats of joint compound to fill depressions even and flush with surface of panel.
 5. At trim flanges apply joint compound in 3 coats, full thickness at bead nose and feather out at least 10".
 6. Sanding: Between applications of compound, rough spots or areas shall be sanded smooth where necessary. When dry, finish coat shall be sanded as required to leave joints and screw spots flat, flush and smooth, and ready for painting or finishing.
- 3.4 3.4 TOLERANCES
- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.
 - B. Shim Work as required to comply with specified tolerances.
 - C. Do not exceed 1/16" offset between planes of abutting sheets at edges or ends.
- 3.5 REPAIR RECOMMENDATIONS FOR DAMAGED DRYWALL
- A. Reset all nails which are protruding or loose.
 - B. For each nail in a fractured area or a protruding nail, add a nail similar to existing, in an undamaged area of drywall near the loose nail into the framing.
 - C. Remove loose gypsum, paper, and joint compound.
 - D. Refinish to match existing texture.
 - E. Paint entire wall plane, color to match existing.

END OF SECTION

SECTION 09 3000**TILING****PART 1 GENERAL**

1.1 SUMMARY

A. Section includes:

1. Tile:

- a. Color Body Porcelain.
- b. Glazed Porcelain.
- c. Quarry and Saltillo.
- d. Terrazzo.
- e. Floor and Wall Glazed.
- f. Wall and Counter Glazed.
- g. Mosaics Floor and Wall.
- h. Natural Stone.
- i. Manufactured Stone.

2. Surface Preparation Products:

- a. Self-Leveling Underlayment.
- b. Waterproofing Membrane.
- c. Crack Isolation Membrane.
- d. Uncoupling Membrane.
- e. Sound Reduction Mat Underlayment.
- f. Shower System - Prefabricated.

3. Setting Materials: Architecturally Engineered Mortar Systems

- a. Polymer Modified Thin Set Mortar.
- b. Polymer Modified Medium Bed Mortar.
- c. Rapid Setting Mortar.
- d. Chemical Resistant Bonding Mortar.
- e. Ceramic Tile Adhesive.

4. Colored Tile Grouts:

- a. Sanded Cement Based Grout.
- b. Non-Sanded Cement Based Grout.

- c. Epoxy Grout.
- d. Single Component High Performance Grout.
- 5. Tile & Stone Care and Maintenance Products:
 - a. Penetrating Stain Protecting Sealer.
 - b. Color Enhancing Sealer.
- 6. Edge Protection and Transition Profiles:
 - a. Floors.
 - b. Walls and Countertops.
 - c. Stair Nosing.
- B. Related Sections:
 - 1. Section 07 9200: Joint Sealers
 - 2. Section 09 3050 Tile Setting Materials and Accessories
 - 3. Section 22 1319.13 Tile Floor and Shower Drains

1.2 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. ANSI A108.1A - Specifications for Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar.
 - 2. ANSI A108.1B - Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex Portland Cement Mortar.
 - 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 Setting Bed with Dry-Set or Latex Portland Cement Mortar.
 - 4. ANSI A108.4 - Specifications for Ceramic Tile Installed with Organic Adhesives or Water-Cleanable Tile Setting Epoxy Adhesive.
 - 5. ANSI A108.5 - Specifications for Ceramic Tile Installed with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar.
 - 6. ANSI A108.6 - Specifications for Ceramic Tile Installed with Chemical-Resistant, Water-Cleanable Tile-Setting and -Grouting Epoxy.
 - 7. ANSI A108.8 - Specifications for Ceramic Tile Installed with Chemical-Resistant Furan Mortar and Grout.
 - 8. ANSI A108.9 - Specifications for Ceramic Tile Installed with Modified Epoxy Emulsion Mortar/Grout.
 - 9. ANSI A108.10 - Specifications for Installation of Grout in Tilework.
 - 10. ANSI A118.1 - Standard Specification for Dry-Set Portland Cement Mortar.
 - 11. ANSI A118.3 - Chemical-Resistant, Water-Cleanable, Tile-Setting and -Grouting Epoxy and Water-Cleanable Tile-Setting Epoxy Adhesive.
 - 12. ANSI A118.4 - Latex-Portland Cement Mortar.

13. ANSI A118.5 - Chemical-Resistant Furan Mortar and Grout.
 14. ANSI A118.6 - Standard Ceramic Tile Grouts.
 15. ANSI A118.7 - Polymer Modified Cement Grouts
 16. ANSI A118.8 - Modified Epoxy Emulsion Mortar/Grout.
 17. ANSI A118.9 - Test Methods and Specifications for Cementitious Backer Units
 18. ANSI A118.10 - Load bearing, Bonded, Waterproof Membranes for Thinset Ceramic Tile and Dimensional Stone.
 19. ANSI A118.11 - Exterior Grade Plywood (EGP) Latex-Portland Cement Mortar.
 20. ANSI A136.1 - Organic Adhesives for Installation of Ceramic Tile.
 21. ANSI A137.1 - Specifications for Ceramic Tile.
- B. ASTM International (ASTM):
1. ASTM C 50 - Standard Practice for Sampling, Sample Preparation, Packaging, and Marking of Lime and Limestone Products.
 2. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
 3. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
 4. ASTM C 241 - Standard Test Method For Abrasion Resistance of Stone Subjected to Foot Traffic.
 5. ASTM C 503 - Standard Specification for Marble Dimension Stone.
 6. ASTM C 615 - Standard Specification for Granite Dimension Stone.
 7. ASTM C 629 - Standard Specification for Slate Dimension Stone.
 8. ASTM C 847 - Standard Specification for Metal Lath.
 9. ASTM C 1028 - Standard Test method for Determining the Static Coefficient of Friction or Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull meter Method.
 10. ASTM D 4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications.
- C. Tile Council of North America (TCNA): TCA Handbook for Ceramic, Glass and Stone Tile Installation, current edition.
- 1.3 1.3 SUBMITTALS
- A. Submit under provisions of Section 01 3300.
 - B. Product Data: Manufacturer's data sheets on each product to be used, including:
 1. Preparation instructions and recommendations.
 2. Storage and handling requirements and recommendations.
 3. Installation methods.
 - C. Shop Drawings: Indicate tile layout, patterns, color arrangement, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, and setting details.

1.4 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- B. Installer: Company specializing in performing the work of this section with minimum 3 years documented experience approved by manufacturer.

1.5 MOCK-UP

- A. Comply with Section 01 4500 for requirements for mock-up.
- B. Construct mock-up of one (1) toilet room and (1) shower room before for Architect review and approval before proceeding with full installation.
 - 1. Coordinate mock-up location with University's Representative.

1.6 PRE-INSTALLATION CONFERENCE

- A. Convene one week prior to commencing work of this section, under provisions of Section 01 3119.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Maintain minimum 50 degrees F during installation of mortar materials.

PART 2 PRODUCTS

2.1 CERAMIC TILE MATERIALS

- A. Porcelain Floor Tile:
 - 1. Size: 11" x 13"
 - 2. Shape: Hexagonal
 - 3. Finish: Matte
 - 4. Color: Regency Gray
 - 5. Manufacturer: Maximo
- B. Ceramic Wall Tile:
 - 1. Size: 12" x 24"
 - 2. Shape: Rectangular
 - 3. Finish: Matte
 - 4. Color: Modelo Gray II
 - 5. Manufacturer: La Rocca
 - 6. Pattern: Running Bond ½ Offset

2.2 TRIM AND ACCESSORIES

- A. Refer to Section 09 3050 for the following trim and accessories:
 - 1. Finishing and edge-protection trim.
 - 2. Movement joints and profiles.

2.3 TILE INSTALLATION MATERIALS

- A. Refer to Section 09 3050 for the following tile installation materials:

1. Cleavage membrane.
 2. Waterproofing membrane.
 3. Polystyrene foam board.
 4. Thin-set mortar.
- B. Self-Leveling Underlayment: Where indicated on the drawings, and elsewhere as required to provide a flat, level surface for direct receipt of tile and other floor coverings on dry, interior installations.
1. Custom Building Products LevelQuik® Rapid Setting Self-Leveling Underlayment for fills up to 1 inch (25 mm) thick.
 2. Custom Building Products LevelQuik® Extended Setting Self-Leveling Underlayment for fills up to 1 inch (25 mm) thick and extended workability.
 3. Custom Building Products LevelLite® Self-Leveling Underlayment for fills up to 2 inches (51 mm) thick. Just 3 lbs / sq ft at ½" (13 mm) thick.
 4. Custom Building Products LevelQuik® Latex Primer for surface preparation when installing self leveling underlayments.
- C. Mortar Bed Installations: Where indicated on the Drawings, and elsewhere as required for mortar bed or brown coat as the substrate for tile work; work to conform to ANSI A108.1.
1. Custom Building Products CustomFloat® Bedding Mortar.
- D. Reinforcing Mesh: 2 inch by 2 inch (50 mm by 50 mm) size weave of 16/16 size wire; welded fabric, galvanized.
- E. Tile Grout: Where indicated on the drawings, and elsewhere as required for filling the joints between tiles. Where indicated on the Drawings, and elsewhere as required for grouting tile as specified by ANSI A108.10 Installation of Grout in tile work.
1. Polymer-Modified Portland Cement Grout:
 - a. Custom Building Products Polyblend® Non-Sanded Tile Grout; ANSI A118.6 or joints up to 1/8 inch (3 mm).
- F. Tile Backer Board:
1. Not Used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Comply with Section 01 3119 for verification of existing conditions before starting work.
- B. Verify that surfaces are ready to receive work.

3.2 PREPARATION

- A. Protect surrounding work from damage.
 1. Take special care to protect in place lavatory supply and waste lines.
- B. Vacuum clean surfaces and damp clean.

- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

3.3 INSTALLATION - GENERAL

- A. Install tile and grout in accordance with applicable requirements of ANSI A108.1 through A108.10, manufacturer's instructions, and TCA Handbook installation methods F111, F112, F114, F141, and W247.
- 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, base and wall joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make joints watertight, without voids, cracks, excess mortar, or excess grout.
- E. Sound tile after setting. Replace hollow sounding units.
- F. Keep control joints free of adhesive or grout. Apply sealant to joints.
- G. Allow tile to set for a minimum of 48 hours prior to grouting.
- H. Grout tile joints. Use standard grout unless otherwise indicated.
- I. Apply sealant to junction of tile and dissimilar materials and junction of dissimilar planes.

3.4 TILE INSTALLATION, FLOOR

- A. Install reinforcing and latex Portland-cement mortar setting bed over cured concrete slab or cleavage membrane on plywood floor. Lap reinforcing at least one full mesh, and support or lift so that it is approximately in the middle of mortar bed. Do not abut against vertical surfaces. Install foam separation material at perimeters and expansion joint locations for caulked joints.
- B. Mix setting mortar in accordance with ANSI recommendations.
- C. Once begun, mortar installation must continue until room is completed. Discard any batch not floated and finished within ½ hour of mixing. Firmly compact before screeding. Screed to true plane and pitch as indicated. Slope mortar bed sufficiently that water flows to drain and no puddling will occur. Slope mortar down to floor drains for proper installation of waterproof membrane. After screeding, firmly rub down with steel or wood float.
- D. Cure mortar bed with a light fog spray of water and cover with 6-mil Visqueen for 72 hours.
- E. Waterproof Membrane:
 - 1. Install waterproof membrane where indicated and in all toilet, shower, and changing areas according to TCNA Standards. Extend membrane up wall mortar as follows:
 - a. 6" minimum above floor.
 - b. In shower rooms, install from floor to ceiling.

2. Ensure that all layers of membrane are fully inserted into clamping ring of floor drain. After membrane installation and before tile setting and place mortar to proper level for setting tile.
 3. Before setting tile and after seven days curing, water test membrane by damming drains and doors, filling floor with water to 4-inch minimum depth, and leaving for 24 hours. Correct any leaks and re-test before proceeding. After testing, protect membrane from traffic until tile Work begins.
- F. Minimum coverage of bond mortar shall be 80% except 95% in shower areas, for quarry tile, and exterior installations. Place tile into fresh mortar, press tile to ensure full contact. Before setting proceeds, set and remove three tiles or sheets of tiles to confirm specified coverage of bond mortar. If coverage is insufficient, utilize a larger toothed trowel or back butter tiles until proper coverage is provided.
- G. Install tile on floors with the following joint widths:
1. Ceramic Mosaic Tile: 1/16 to 1/8 inch.
- 3.5 CLEANING
- A. Clean tile and grout surfaces.
- 3.6 PROTECTION OF FINISHED WORK
- A. Do not permit traffic over finished floor surface for 4 days after installation.
- 3.7 SCHEDULE
- A. See Finish Schedule on Drawings.

END OF SECTION

SECTION 09 3050**TILE SETTING MATERIALS AND ACCESSORIES****PART 1 GENERAL**

- 1.1 SECTION INCLUDES
- A. Waterproofing Membrane.
 - B. Uncoupling Membrane.
 - C. Floor drain, with integrated bonding flange.
 - D. Prefabricated shower components.
 - E. Radiant Heated Floors.
 - F. Sound Control Underlayment.
 - G. Setting materials.
- 1.2 RELATED SECTIONS
- A. Section 07 9000 – Joint Sealants.
 - B. Section 09 3000 - Tiling.
 - C. Section 22 13 19.13 - Sanitary Drains.
- 1.3 REFERENCES
- A. CSA B79-08: Floor, Area, and Shower Drains, and Cleanouts for Residential Construction.
 - B. IAPMO IGC 195: Interim Guide Criteria for Floor Drain with Integrated Bonding Flange.
 - C. Tile Council of North America (TCNA) Handbook for Ceramic Tile Installation.
 - D. Terrazzo, Tile and Marble Association of Canada (TTMAC) Specification Guide 09300 Tile Installation Manual.
 - E. American National Standard Specifications for the installation of ceramic tile A108 /A118 / A136.1.
- 1.4 SUBMITTALS
- A. Submit under provisions of Section 01 3300.
 - B. Product Data: Manufacturer's data sheets on each product to be used.
 - C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
 - D. Warranty document showing duration and scope to be submitted with product submittals.
- 1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years' experience.
 - B. Source Limitations for Setting Materials and Accessories: Obtain products of a uniform quality for each application condition from a single manufacturer.
 - C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. See Mock-up requirements in Section 09 3000.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.
 - D. Preinstallation Conference: Conduct conference at the Project site.
 - 1. Convene one week prior to commencing work of this section.
 - 2. Require attendance of installation material manufacturer, tile supplier, tile installer and installers of related work. Review installation procedures and coordination required with related work.
 - 3. Meeting agenda includes but is not limited to:
 - a. Surface preparation.
 - b. Tile and installation material compatibility.
 - c. Manufacturer and installer warranty duration and scope covered by warranty.
 - d. Edge protection, transition, and prefabricated movement joint profiles.
 - e. Waterproofing techniques.
 - f. Crack isolation techniques.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Store products in manufacturer's unopened packaging until ready for installation.
 - B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
 - C. Store materials in a dry, warm, ventilated, weathertight location.
- 1.7 PROJECT CONDITIONS
- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by the manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.8 WARRANTY
- A. Obtain products of a uniform quality for each premanufactured tile profile, and mortar and waterproofing and uncoupling membrane from a single manufacturer, to maintain the installation system and provide multi-product warranty from selected manufacturer.

- B. Manufacturer Warranty: Furnish manufacturer's written material and labor warranty signed by an authorized representative using manufacturer's standard form agreeing to furnish materials and labor required to repair or replace work which exhibits material defects caused by manufacture or design and installation of product. "Defects" are defined to include but not limited to deterioration or failure to perform as required.
 - 1. Warranty Period - Shower Tiling System: Manufacturer shall warrant the products to be free from material and labor Defects for a period of 25 years from date of Substantial Completion.
 - 2. Provide sample warranty during submittal process.
 - 3. Requests for substitutions will not be considered
- C. Installer Warranty: Furnish installer's written workmanship warranty signed by an authorized representative using installer's standard form agreeing to provide labor required to repair or replace work which exhibits workmanship defects. Defects is defined to include but not limited to deterioration or failure to perform as required.
 - 1. Warranty Period: Installer shall warrant the installation to be free from workmanship Defects for a period of 2 years from date of Substantial Completion.
 - 2. Provide sample warranty during submittal process.

1.9 COORDINATION

- A. Coordinate Work with other operations and installation of floor finish materials to avoid damage to installed materials.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Schluter Systems L.P.

2.2 WATERPROOFING MEMBRANE AND BUILDING PANEL

- A. Project specific warranty to be provided from Schluter Systems L.P. by Tile Contractor.
- B. Schluter- KERDI. Polyethylene Membrane: 0.008 inch (0.2 mm) thick, orange with polypropylene fleece laminated on both sides. Perm rating of .90
 - 1. Meets or exceeds requirements of the "American national standard specifications for load bearing, bonded, waterproof membranes for thin-set ceramic tile and dimension stone installation A118.10S (Sheet Membrane).
 - 2. Listed by cUPC.
 - 3. Evaluated by ICC-ES. See Report No. ESR-2467.
 - 4. Corners and seals: Matching preformed inside corners. Color: Orange.
 - 5. Corners and seals: Matching preformed outside corners. Color: Orange.
 - 6. Corners and seals: Matching preformed pipe seals. Color: Orange.
 - 7. Corners and seals: Matching preformed mixing valve seals. Color: Orange.

- C. Schluter-KERDI-BAND: Seams and Corners material to be 0.004 inch (0.1 mm) thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides. Width: As required.
- D. Schluter-KERDI-BOARD: Rigid extruded polystyrene foam building element panel, with reinforcement material and polypropylene fleece webbing laminated on both sides for thin-set ceramic tile and dimension stone Installations.
 - 1. Panel Thickness: As required.
 - 2. Panel Size: To be determined.
 - a. Meets or exceeds the requirements of the "American national standard specifications for load bearing, bonded, waterproof membranes for thin-set ceramic tile and dimension stone installation A118.10S (Sheet Membrane).
 - b. Listed by cUPC and is evaluated by ICC-ES. See Report No. ESR-2467.
 - 3. Waterproofing Seaming Membrane: KERDI BAND Seams and Corners. Material to be 0.004 inch (0.1 mm) thick, orange polyethylene membrane, with polypropylene fleece laminated on both sides.
 - 4. PMG 1204.ting

2.3 FLOOR DRAIN WITH INTEGRATED BONDING FLANGE

- A. When a two stage drain is present on site or a two stage drain is required for the specified drain grate specified the KERDI-DRAIN ADAPTER KIT is to be installed
- B. Project specific warranty to be provided from Schluter Systems L.P. by Tile Contractor.
- C. Schluter-KERDI-DRAIN: Plastic floor drain 11-25/32 inch (300 mm) diameter, trapezoid-perforated, integrated bonding flange.
 - 1. Polypropylene Fleece: Thermally laminated to surface and hubbed connection to 2-inch (50 mm) drainpipe
 - 2. Drain Detail: As referenced in method B422 and B422C of the Tile Council of North America Handbook for Ceramic Tile Installation.
 - 3. Grate Type, Material, and Finish:
 - a. Classic: Arc-shaped and trapezoid-shaped openings.
 - b. Nominal Grate Size: 4-inch (100 mm) by 4-inch (100 mm) square.
- D. Schluter-KERDI-DRAIN ADAPTER KIT: Stainless steel adaptor ring with over-molded gasket. 11-13/16 inch (300 mm) diameter sloped integrated bonding flange, with thermally laminated polypropylene fleece, and grate assembly.
 - 1. Grate Assembly: Grate, height adjustment collar, and lateral adjustment ring with trapezoid perforations.
 - 2. Drain Detail: As referenced in method B422 and B422C of the Tile Council of North America Handbook for Ceramic Tile Installation.
 - 3. Drain Type: As referenced in methods B422 and B422 STONE in the Tile Council of North America Handbook for Ceramic, Glass, and Stone Tile Installation.

4. Grate Type, Material and Finish:
 - a. Classic: Arc-shaped and trapezoid-shaped openings.
 - b. Nominal Grate Size: 4-inch (100 mm) by 4-inch (100 mm) square.

2.4 SETTING MATERIALS

- A. Schluter-ALL SET Modified Thin Set Mortar: Specialized sag-resistant modified thin-set mortar specifically formulated for use with Schluter membranes and boards. Engineered for use both under and over DITRA and KERDI products. Suitable for use with ceramic, porcelain, and stone tile, including large and heavy tile, in conjunction with Schluter-Systems' uncoupling and waterproofing membranes. Meets the requirements of ANSI A118.4T, A118.11, and A118.15T.
 1. Color: As selected by Architect.

2.5 TRIM AND ACCESSORIES

- A. Finishing and edge-protection trim for tiled surfaces.
 1. Schluter-JOLLY: L-shaped profile. 9/64 inch (3.5 mm) wide top and vertical wall sections that together form the visible surface. Integrated trapezoid-perforated anchoring leg, and integrated grout joint spacer.
 - a. Corners: Matching inside corners.
 - b. Corners: Matching outside corners.
 - c. Profile Height: As required to coordinate with tile selection and setting system.
 - d. Color/Finish : As selected by Architect.

2.6 MOVEMENT JOINTS AND COVE-SHAPED PROFILES (AS REQUIRED BY TCNA HANDBOOK)

- A. Schluter-DILEX-BWA: Profile with integrated rigid, recycled PVC trapezoid-perforated anchoring leg and dovetailed channel, which are connected by a 3/16 inch (5 mm) wide soft CPE movement zone that forms the visible surface, and a slit lower movement zone of soft CPE.
- B. Profile Height: As required to coordinate with tile selection and setting system.
- C. Color/ Finish: As selected by Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION – SHOWER RECEPTOR

- A. Shower Receptors: TCNA Installation Method B422 (Bonded Waterproof Membrane): Thin-set Latex-Portland cement mortar over waterproof membrane over solid backing and concrete/or wood subfloors; installed using an integrated bonding flange drain; Latex-Portland Cement Grout. ANSI STANDARD

3.4 INSTALLATION – WALL TILE

- A. Over regular Gypsum Wallboard (Non Glass Mat, Non Mold/Moisture Resistant) on studs, install in accordance with TCNA (HB) Method B412 (fiberglass pans and bathtub surrounds) or TCNA (HB) Method B422 (showers with wall and floor tile), using waterproof membrane in shower/bathtub environments.

3.5 MOVEMENT JOINTS

- A. Movement Joints, General: Installation Quality Standard: In accordance with TCNA Movement Joint Design Essentials EJ171 and as specified below.
 - 1. Interior Movement Joint Spacing: As Indicated on Drawings and as specified below:
 - a. Tile Exposed to Direct Sunlight or Moisture: 8 ft to 12 ft (2.4 m to 3.6 m) on center each way, 1/4-inch wide unless indicated otherwise.
 - b. Tile Not Exposed to Sunlight: 20 ft to 25 ft (6 m to 7.5 m) on center each way, 1/4-inch wide unless indicated otherwise.
- B. Interior Floor Joint Installation Schedule: Seal interior floor movement joints, as defined by TCNA, according to following schedule:
 - 1. Construction Joints: Floor joint sealant and backer rod.
 - 2. Contraction (Control) Joints: Floor joint sealant and backer rod.
 - 3. Isolation Joints: Floor joint sealant and backer rod.
 - 4. Tile Expansion Joints: Floor joint sealant and backer rod.
 - 5. Perimeter Joints between Wall and Floors: Floor joint sealant with backer tape.

3.6 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 09 6513
RESILIENT BASE

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section includes resilient wall base.
- 1.2 RELATED SECTIONS:
- A. Section 09 6519: Resilient Flooring.
- B. Section 09 6813: Tile Carpeting.
- 1.3 REFERENCES
- A. ASTM F1861 – Standard Specification for Resilient Wall Base.
- B. Resilient Floor Covering Institute (RFCI) - FloorScore Certification Program.
- 1.4 SUBMITTALS
- A. Submit under provisions of Section 01 3300.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics.

PART 2 PRODUCTS

- 2.1 RESILIENT BASE
- A. Manufacturer: Armstrong World Industries, Inc.
- B. Height: 4 inch.
- C. Thickness: 1/8 inch.
- D. Color: Metal Gray.
- 2.2 ACCESSORIES
- A. Adhesive:
1. Water based, waterproof, recommended by base manufacturer.
 2. Maximum volatile organic compound (VOC) content: 50 grams per liter.

PART 3 EXECUTION

- 3.1 PREPARATION
- A. Prepare surfaces to receive base:
1. Remove materials that could interfere with adhesion.
 2. Fill low spots with patching compound; finish flush with adjacent surface.
 3. Remove high spots, ridges and nibs.
- 3.2 INSTALLATION

- A. Apply adhesive continuously to back of base.
- B. Maintain top edge true to line and bottom edge in continuous contact with floor. Butt joints tight; butt base tight to adjacent construction.
- C. Do not install pieces less than 6 inches long.
- D. Miter and butt inside corners.
- E. At outside corners install preformed corner pieces.
- F. Include the following if premolded ends are required.
- G. At exposed ends, install premolded units.
- H. Scribe to door frames and other interruptions.

3.3 CLEANING AND PROTECTION

- A. Comply with manufacturer's written instructions for cleaning and protection of resilient products.
- B. Perform the following operations immediately after completing resilient product installation:
 - 1. Remove adhesive and other blemishes from exposed surfaces.
 - 2. Damp-mop surfaces to remove marks and soil.
- C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

3.4 CLEAN UP

- A. Remove rubbish, debris, and waste materials and legally dispose of off Project site.

3.5 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

SECTION 09 6516
RESILIENT SHEET FLOORING

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section includes sheet vinyl flooring, edging strips, base, underlayment, adhesives, and primers.
- 1.2 RELATED SECTIONS:
- A. Section 09 6513 Resilient Base.
- 1.3 REFERENCES
- A. American Society for Testing and Materials (ASTM):
1. ASTM E84 – Test Method for Surface Burning Characteristics of Building Materials.
2. ASTM E648 – Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source.
3. ASTM E662 – Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
- B. Resilient Floor Covering Institute (RFCI)
- 1.4 SUBMITTALS
- A. Submit under provisions of Section 01 3300.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics.
- C. Shop Drawings: Layout including sheet directions and seam locations.

PART 2 PRODUCTS

- 2.1 MATERIALS
- A. Sheet Vinyl Flooring
1. Manufacturer: ShawContract
2. Product: Basstones Sheet (0301V)
3. Size: 6 feet x 75 feet
4. Color: Graytone Fade (00410)
- B. Weld Rods
1. Manufacturer: ShawContract
2. Color: 353VS – WEL2009
- C. Edging Strips:
1. Extruded aluminum, mill finish, mechanically cleaned.

2. One inch wide, one-quarter inch thick, bevel one edge to one-eighth inch thick.
 3. Drill and counter sink edge strips for flat head screws. Space holes near ends and approximately 9 inches on center in between.
- D. Underlayment
1. Floor patch and leveling compound or underlayment as recommended by the sheet vinyl flooring manufacturer.
- E. Adhesives and Primers:
1. As recommended by the sheet vinyl flooring manufacturer.
- F. Sealant
1. As specified in Section 07 9200.

PART 3 EXECUTION

3.1 INSPECTION AND PREPARATION OF SURFACES

- A. Before starting installation, examine all surfaces on which the finish flooring are to be applied. Examination includes bond, moisture, and alkali testing of concrete subfloors. Any defective surfaces or conditions preventing proper execution of the work shall be corrected as required.
- B. Subsurfaces and backing surfaces shall be dry, clean of dust, paint spots, grease, and bond breaking or curing compounds. Subsurfaces shall also be free from roughness and sharp edges to prevent protrusions and bulges after resilient material is laid or applied. Fill all joints, cracks, and depressions in concrete slabs with specified floor patch and underlayment material. Grind down ridges and high spots flush and smooth with surrounding surfaces.
- C. Nothing specified herein shall be construed as relieving the Contractor of any responsibility for the quality of the finished installation. Surfaces on which resilient flooring and base are to be applied shall be level and in proper condition in every respect for an acceptable installation and long life without defects.

3.2 INSTALLATION

- A. Comply with RFCI installation specifications.
- B. Keep materials at a temperature of 70 degrees Fahrenheit or higher for at least 48 hours before using, and maintain 70 degrees Fahrenheit or higher room temperatures at least three days before, during, and after application of materials. Apply materials in accordance with the sheet vinyl manufacturer's installation instructions. Materials shall be installed only by skilled and experienced applicators authorized and approved by the manufacturer.
- C. Sheet Vinyl Flooring:
1. Sheet vinyl flooring shall be installed in accordance with the sheet vinyl flooring manufacturer's instructions.
 2. Apply specified adhesive with a notched steel trowel to ensure an even bed of adhesive. Install sheet in full coverage adhesives. Air pockets or loose edges will not be accepted.
 3. Lay out vinyl sheets to ensure minimum number of seams. Only "perfects" shall be used so that cross seams shall be kept to an absolute

minimum. Lay sheets firmly against adjacent sheets to minimize joints. Neatly scribe around pipes, fixtures, and equipment to form tight, hairline joints free of gaps.

4. Sheet vinyl flooring is not required under fixed cabinets having covered fronts and integral bottoms and which are permanently anchored to the structure.
 5. Install edging strips wherever sheet vinyl terminates at an opening or where there is an unprotected edge. Top of strips shall be flush with top of sheet vinyl flooring.
- D. Complete resilient flooring installation before installing resilient base.
 - E. Extend sheet vinyl floor coverings into toe spaces, door reveals, closets, and similar openings.
 - F. Where sheet vinyl floor coverings abut other flooring materials, floors shall finish level.
 - G. Follow manufacturer's recommendations regarding pattern match, if applicable.

3.3 WELDING

- A. Heat weld all joints of flooring and base using equipment and procedures recommended by flooring manufacturer.
- B. Welding shall consist of routing joint, inserting a welding rod into routed space, and terminally fusing into a homogeneous joint.
- C. Upon completion of welding, surface across joint shall finish flush, free from voids, and recessed or raised areas.
- D. Fusion of Material: Joint shall be fused a minimum of 65 percent through thickness of material, and after welding shall meet specified characteristics for flooring.

3.4 CLEANING, SEALING, AND PROTECTION

- A. Until floors are well seated at least 72 hours at a maintained temperature of not less than 70 degrees Fahrenheit, traffic shall be kept to an absolute minimum.
- B. Just before turning spaces finished spaces over to University, and not before, clean resilient flooring thoroughly in accordance with manufacturer's recommendations. After cleaning, apply one coat of approved non-skid finish to floors and polish with a mechanical buffer.
- C. Install clean plywood or board walks over clean non-staining building paper where any traffic from other trades must pass over completed resilient floors. Maintain protection until substantial completion.

END OF SECTION

SECTION 09 6519
LUXURY VINYL TILE FLOORING

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section includes: Luxury Vinyl Tile.
- 1.2 RELATED SECTIONS:
- A. Section 07 9200: Joint Sealants.
- 1.3 DEFINITIONS
- A. Pop-up: A pop-up is defined as any surface deviation or looseness of substrate that is equal to or greater than 1/64 (0.015625) inch above the concrete floor level, regardless of the size.
- 1.4 SUBMITTALS
- A. Product Data: Submit manufacturer's published technical data describing materials, construction and recommended installation instructions. Submit technical data and installation instructions for each adhesive material. Submit list and Product Data of recommended finish materials.
- B. Maintenance Instructions: Submit manufacturer's recommendations for maintenance, care, and cleaning of luxury vinyl tile flooring.
- C. Shop Drawings: Indicate installation pattern.
- D. Installer's Experience Qualifications: Submit list of not less than five (5) projects, extending over period of not less than five years, indicating installer's experience record. Submit letter from manufacturer indicating manufacturer's approval for installer of the products.
- 1.5 QUALITY ASSURANCE
- A. Qualifications of Installer: Minimum five (5) years' experience in successfully installing the same or similar flooring materials.
- B. Qualifications of Supervising Installer: In addition to the qualifications of the installer listed above, the flooring installer's supervisor shall have a minimum of (10) hours Cal-OSHA safety training.
- C. Comply with the following as a minimum requirement:
1. Materials shall be compliant with requirements of CBC Chapter 11B and 2010 ADA Standards.
2. ASTM E84: Class A Flame Spread Rating of 25 or less.
3. Moisture Testing: ASTM F1869.
- 1.6 DELIVERY, STORAGE AND HANDLING
- A. Materials shall be delivered to the Project site in original unopened manufacturer's packaging clearly labeled with manufacturer's name.

- B. Materials shall be stored at room temperature, but not less than 70 degrees F for not less than 48 hours before installation, unless manufacturer's instructions specify otherwise.

1.7 PROJECT CONDITIONS

- A. Ventilation and Temperature: Verify areas that are to receive new flooring are ventilated to remove fumes from installation materials. Verify that areas are within temperature range recommended by the various material manufactures for Project site installation conditions.

1.8 WARRANTY

- A. Manufacturer shall provide a five (5) year material warranty.
- B. Installer shall provide a two (2) year fabrication and installation warranty.

PART 2 PRODUCTS

2.1 LUXURY VINYL TILE (LVT) FLOORING

- A. Manufacturer: Shaw Contract.
- B. Style: Amalgam (4113V)
- C. Size: 20 inches by 20 inches
- D. Color: Fault
- E. Adhesives: As recommended by flooring manufacturer.
- F. Patching, smoothing, and leveling monolithic subfloors: As recommended by flooring manufacturer.
- G. Provide transition/reducing strips tapered to meet abutting materials as shown in drawings.

2.2 VINYL COMPOSITION TILE (VCT) FLOORING

- A. Manufacturer: Armstrong World Industries, Inc.
- B. Collection: Standard Excelon Imperial Texture
- C. Color: Jubilee White
- D. Size: 12 inch by 12 inch
- E. Thickness: one-eighth inch
- F. Crack Filler and Leveling Compound
 - 1. 100 percent cementitious binder type (as defined by ASTM C150).
 - 2. Leveling Compound shall meet or exceed 200 pounds when tested in accordance with ASTM C1583.
 - 3. Per the requirements outlined in Section 03 5416.
- G. Interlocking floating glue free installation.
- H. Concrete Primer: Non-staining type recommended by manufacturer of luxury vinyl tile.

- I. Adhesive: Water based, low odor type formulated specially for installation with luxury vinyl tile, recommended by manufacturer.
- J. Reducer Strips: Tapered rubber not less than one inch wide, and thickness to match tile.
- K. Water-Based Urethane Coating
 - 1. Low-VOC, water-based urethane floor finish.
 - 2. Basis-of-Design Product: EPIC
 - 3. Basis-of-Design Manufacturer: Ultra Durable Technologies

PART 3 EXECUTION

3.1 COORDINATION

- A. Coordinate with related Work to assure level, dry, smooth, and clean finish surfaces to receive resilient tile flooring.

3.2 EXAMINATION

- A. Field verify and correct deficiencies of conditions affecting Work before commencing Work of this section.

3.3 PREPARATION OF CONCRETE SLABS

- A. Do not start preparation until underlying concrete floor slabs are at least 90 days old. Any leveling compound under a vapor or moisture barrier shall be warranted to be installed in a wet or moist environment without moisture limitations.
- B. Leveling: Check sub-floors for true to level and plane within the tolerance listed in Manufacturer's installation instructions. Test floor areas both ways with a 10-foot straightedge and repair high and low areas exceeding allowable tolerance. Pop ups shall be hammered out and floor filled with an approved cementitious leveling compound. Remove high areas by power sanding, stone rubbing or grinding, chipping off and filling with an approved leveling compound, or equivalent method. Fill low areas with an approved leveling compound. Repair and level surfaces having abrupt changes in plane, such as trowel marks or ridges, whether or not within allowable tolerance. Clean areas where repairs are performed.
- C. Cracks or Depressions: Fill voids with an approved cementitious leveling compound of the type recommended by flooring manufacturer for the specific Work conditions.
- D. Cleaning: After leveling, clean substrates of deleterious substances and foreign matter.
- E. Moisture Testing: Test new and old concrete slabs for adequate dryness.
 - 1. Testing shall conform to ASTM F1869 and Section 01 43 24.
 - 2. Test concrete for alkalinity. An acceptable range is between pH5 to pH9. Excessive alkalinity shall be neutralized, using manufacturer's recommended methods, prior to installation of floor covering.
 - 3. Delay application of flooring until sub-floors are sufficiently dry according to flooring manufacturer's recommendations, or perform remedial measures as recommended by flooring materials manufacturer.

3.4 INSTALLATION OF TILE

- A. Install resilient tile flooring when ambient temperature is 70 degrees F or higher or manufacturer's range.
- B. Install the tile adhesive in a thin film evenly with a notched trowel. Trowel notches shall be as recommended by adhesive manufacturer.
 - 1. Mix adhesive in accordance with manufacturer's instructions.
 - 2. Install adhesive only in area that can be covered by flooring material within the adhesive manufacturer's recommended working time. Do not set tile into wet adhesive.
 - a. At static dissipative flooring, Install copper grounding strips into adhesive in strict accordance with manufacturer's written instructions.
 - 3. Tile must be set into dry, but still tacky, adhesive film. Remove adhesive that has dried beyond recommended time, or has filmed over and is no longer tacky.
 - 4. Adhesive application rate shall be as required to avoid telegraphing trowel lines to the surface after maintenance coatings are applied. Adjust tile runoff during installation if necessary.
 - 5. Immediately remove any excess adhesive from the tile surface using the adhesive manufacturer's recommended cleaner and a damp, not wet, cloth.
- C. Provide reducer where floor covering edges are exposed, such as at center of the door or where floor coverings terminate.
- D. Install tiles symmetrically about centerlines of areas progressing toward walls. Adjust border tiles as required. Tiles shall be straight and joints close. Tile shall be cut to fit snugly at doorframes, and walls. No slivers at edges.
- E. Mechanically cut flooring material to produce square true edges.
- F. As floor tile is installed and within adhesive's recommended working time, roll with a clean, smooth, 100-pound roller in both directions. As the rolling proceeds, replace any loosened, defective, or damaged tile with new and finish to the specified condition.
- G. Remove dust, debris, and soil with any combination of sweeping, micro-fiber dust-mopping with a properly treated, non-oily mop and vacuuming.

3.5 CLEANING AND COMPLETION

- A. Maintain flooring surfaces clean as installation progresses.
- B. Clean adjacent baseboard and other surfaces of adhesive and other materials. Replace damaged or defective Work to the specified condition.

3.6 CLEAN UP

- A. Remove rubbish, debris, and waste materials and legally dispose of off Project site.

3.7 PROTECTION

- A. Protect the Work of this section until Substantial Completion.

END OF SECTION

PENTLAND HILLS
BUILDING O INTERIOR REFRESH
PROJECT NO. 958912
CONTRACT NO. 958912-EDPALT-2026-34

LUXURY VINYL TILE FLOORING
SECTION 09 6519 - PAGE 5

SECTION 09 6800
CARPETING

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section includes carpet tile, fully adhered; matching roll carpet for direct-glued installation and accessories.
- 1.2 RELATED SECTIONS:
- A. Section 09 6500: Resilient Base
- 1.3 REFERENCES
- A. ASTM D2859 - Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- C. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- 1.4 SUBMITTALS FOR REVIEW
- A. Section 01 3300: Procedures for submittals.
- B. Shop Drawings: Indicate seaming plan, method of joining seams, direction of carpet pile and pattern, and location of edge moldings and edge bindings.
- C. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- 1.5 QUALITY ASSURANCE
- A. Installer Qualifications: Company specializing in installing carpet with minimum three years documented experience.
- 1.6 1.7 ENVIRONMENTAL REQUIREMENTS
- A. Store materials in area of installation for 48 hours prior to installation.

PART 2 PRODUCTS

- 2.1 WALK-OFF BROADLOOM CARPET
- A. Manufacturer: Shaw Contract.
- B. Style: Welcome II (60745)
- C. Color: Ebony (34500)
- 2.2 ACCESSORIES
- A. Sub-Floor Filler: As recommended by flooring material manufacturer.

- B. Moldings and Edge Strips: As selected.
- C. Seam Adhesive: As recommended by manufacturer.
- D. Contact Adhesive: As recommended by carpet manufacturer.
- E. Base: As specified in Section 09 6513 Resilient Base.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that floor surfaces are smooth and flat within tolerances specified and are ready to receive work.
- B. Verify that concrete floors are ready for carpet installation by testing for moisture emission rate and alkalinity. Obtain instructions if test results are not within specified limits.
 - 1. Moisture emission rate: Not greater than 3 lb per 1000 sq ft per 24 hours when tested using calcium chloride moisture test kit for 72 hours.
 - 2. Alkalinity: pH range of 5-9.

3.2 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill minor or local low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.

3.3 INSTALLATION

- A. Install carpet in accordance with manufacturer's instructions and CRI 104.
- B. Verify carpet match before cutting to ensure minimal variation between dye lots.
- C. Lay out carpet and locate seams in accordance with shop drawings:
 - 1. Locate seams in area of least traffic, out of areas of pivoting traffic, and parallel to main traffic.
 - 2. Do not locate seams perpendicular through door openings.
 - 3. Align run of pile in same direction as anticipated traffic and in same direction on adjacent pieces.
 - 4. Locate change of color or pattern between rooms under door centerline.
 - 5. Provide monolithic color, pattern, and texture match within any one area.
- D. Install carpet tight and flat on subfloor, well fastened at edges, with a uniform appearance.
- E. Double cut carpet seams, with accurate pattern match. Make cuts straight, true, and unfrayed. Apply seam adhesive to cut edges of woven carpet immediately.
- F. Apply contact adhesive to floor uniformly at rate recommended by manufacturer. After sufficient open time, press carpet into adhesive.

- G. Apply seam adhesive to the base of the edge glued down. Lay adjoining piece with seam straight, not overlapped or peaked, and free of gaps.
 - H. Roll with appropriate roller for complete contact of adhesive to carpet backing.
 - I. Trim carpet neatly at walls and around interruptions.
 - J. Complete installation of edge strips, concealing exposed edges. Bind cut edges where not concealed by edge strips.
 - K. Provide reducer strip at transitions from carpet to vinyl or other flooring.
- 3.4 CLEANING
- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
 - B. Clean and vacuum carpet surfaces.

END OF SECTION

SECTION 09 6813**TILE CARPETING****PART 1 GENERAL**

1.1 SUMMARY

- A. Section includes tile carpeting.
- B. Related Sections:
 - 1. Section 09 6500: Resilient Base

1.2 REFERENCES

- A. Aachener Test: Dimensional Stability (DIN Standard 54318 175 Stain Resistance; Pile Floor Covering.
- B. Americans with Disabilities Act (ADA)
 - 1. 2010 ADA Standards for Accessible Design, Section 302.2.
- C. American Association of Textile Chemists and Colors (AATCC)
 - 1. 16, Option E Colorfastness of Light
 - 2. 165 Colorfastness to Crocking, Carpets AATCC Crock meter Method.
- D. ASTM International
 - 1. D2859 - Standard Test Method for Flammability of Finished Textile Floor Covering Materials.
 - 2. D4258 - Standard Practice for Surface Cleaning Concrete for Coating.
 - 3. E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 4. E648 - Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
 - 5. E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
 - 6. F710 - Standard Practice for Preparing Concrete to Receive Resilient Flooring.
 - 7. F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
 - 8. F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.
- E. Carpet and Rug Institute
 - 1. 104 - Standard for Installation Specification of Commercial Carpet.
 - 2. Indoor Air Quality Testing Program.
- F. Consumer Product Safety Commission (CPSC)

1. FF-1-7 Methenamine Pill Test.
- G. National Fire Protection Association
1. 253 - Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.

1.3 SUBMITTALS

- A. Section 01 3300: Procedures for submittals.
- B. Product Data: Provide data on specified products, describing physical characteristics, sizes, patterns, colors available.
- C. Shop Drawings: Indicate carpet tile locations, dye lot limitations, direction of carpet tile in each room or area, and type and location of edgings, type of subfloor, and method of installation.
- D. Warranty.
- E. Test Reports: Provide certified test reports, prepared by an independent testing laboratory, showing conformance to specified performance standards. Test results shall represent average results for production goods, and shall not be over two years old.

1.4 QUALITY ASSURANCE

- A. Qualifications
 1. Manufacturer: Company specializing in carpet tile manufacturing with a minimum of ten continuous years of documented experience. Carpet manufacturing processes must be certified by a recognized ISO registrar to the current requirements of either the ISO 9001 or ISO 9002 standards for quality management systems as established by the International Organization for Standardization (1987), revised 1994).
 2. Installer: Company, with a minimum of five years documented experience in the installation of carpet tiles, certified or accredited by manufacturer.
 3. Installer shall have documented experience with a formal lift system when applicable to the job.

1.5 DELIVERY AND STORAGE

- A. Deliver all material to the installation site in the manufacturer's original packaging. Packaging shall contain manufacturer's name, product color and pattern name, identification number, and other related information.
- B. Carpet tiles shall be stored between 40°F and 100°F and shall be conditioned to between 60°F and 90°F for 48 hours prior to installation.

1.6 PROJECT SITE CONDITIONS

- A. Floor temperature shall be a minimum of 60° F for proper adhesive performance.
- B. Floor pH shall not exceed 10.0 (acid etch using a 50/50 vinegar and water or a 1/20 muriatic acid and water solution if greater than 10.0).
- C. Water vapor transmission of sub-floor shall not exceed 3 lbs. per 1,000 square feet per 24-hour period as determined by the #625 Calcium Chloride Test.

- D. Permanent building lights or lighting of equal brilliance available during installation.

1.7 WARRANTY

- A. Provide certified copies of the following manufacturer's product warranties.
 1. Lifetime Face Fiber Wear.
 2. Lifetime Staining/Soiling Resistance.
 3. Lifetime Color Pattern Permanency.
 4. Lifetime Delamination of Backing.
 5. Lifetime Edge Ravel.
 6. Lifetime Tuft Bind.
 7. Lifetime Floor Compatibility.
 8. Lifetime Antistatic.
 9. Lifetime Antimicrobial Protection.
 10. Lifetime Flammability.
 11. Lifetime Cushion Resiliency.
 12. Lifetime Dimensional Stability.
 13. Lifetime Floor Release.
 14. Lifetime Moisture Resistance.
 15. Ten Year TractionBack.
- B. Warranty shall be sole source responsibility of the manufacturer. Second source warranties or warranties that involve parties other than the manufacturer are unacceptable.

PART 2 PRODUCTS

2.1 CARPET TILE

- A. At Common Areas
 1. Manufacturer: Shaw Contract.
 2. Style: Hand Stitch Tile (5T516)
 3. Color: Mended Denim (16504)
 4. Size: 9 inch by 36 inch
- B. At Units
 1. Manufacturer: Shaw Contract.
 2. Style: Manifest Tile (5T667)
 3. Color: Leather (62500)
 4. Size: 24 inch by 24 inch
- C. At Entrances
 1. Manufacturer: Shaw Contract.

2. Style: Jive (5T412)
3. Color: Stride (12505)
4. Size: 24 inch by 24 inch

2.2 ACCESSORIES

- A. Adhesive: As recommended by manufacturer.
- B. Edgings: Extruded aluminum.
- C. Cap Strip: Extruded aluminum.
- D. Leveling Compound: Ardex feather finish or as recommended by manufacturer.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that surfaces are smooth and flat and are ready to receive work.
- B. Verify that floor temperature is a minimum of 60°F for proper adhesive performance.
- C. Verify the %Relative Humidity or water transmission rate within the floor and reference Section 3.3 Installation for details on how to proceed.
- D. Verify that floor pH does not exceed 10.0.
- E. Beginning of installation means acceptance of existing substrate and site conditions.

3.2 PREPARATION

- A. The sub-floor shall be structurally sound, clean, dust free, smooth, and level. Cracks and holes in excess of 1/8" should be filled with an underlayment material such as Ardex feather finish, or other Portland cement based floor-patching compound.
- B. Due to the non-PVC nature of specified backing, it is not necessary to remove existing flooring adhesive such as "cut back" emulsion, or residual latex based general-purpose adhesive.
- C. Residual trowel notches shall be reduced to 1/32" by mechanical scraping or grinding or by light patching.
- D. Do not sand or mechanically abrade any asphaltic (black) adhesive. These type adhesives may contain asbestos fibers from vinyl asbestos tile.
- E. All protruding objects must be removed.
- F. Prohibit traffic from area until filler is cured.
- G. Vacuum clean substrate.

3.3 INSTALLATION

- A. Install carpet tiles and adhesive in accordance with manufacturer's installation instructions.
- B. Carpet to be secured to the floor in compliance with 2010 ADA Standards for Accessible Design, Section 302.2.

- C. Proper layout and planning shall be completed prior to any application of adhesive or carpet tile.
- D. Two working chalklines shall be applied to the floor to insure a straight, square properly aligned installation. These chalklines intersect at the starting point and are exactly 90° to each other.
- E. Begin installation using a pyramid technique and aligning the first tile at the intersection of the two chalklines.
- F. Always slide each module into position from the side to prevent trapped yarn. Set each module by firmly rubbing both joints.
- G. Modules should be tight but not compressed. Peaking will occur when modules are too tight. Too loose an installation can slip and create obvious gap with use.
- H. Arrows are embossed and printed on the back of each module indicating pile direction. All arrows shall run in the same direction.
- I. A parallel of "scribe" cutting technique may be used when cutting the modules. Any method leading to a clean, properly sized cut is acceptable.
- J. Cuts are most easily and cleanly done through the face of the module.
- K. Provide unobstructed spaces for removing and replacing furniture and equipment in the installation area.
- L. Concrete slabs shall have Relative Humidity (RH) and pH range compliant to manufacturer's QC standards. Follow manufacturer's guidelines for installing tiles with or without adhesives.

3.4 INSTALLATION OF EDGINGS

- A. Install strips where carpet tiles abut dissimilar flooring materials; secure to subfloor.
- B. Center strips under doors where carpet tiles terminate at door openings.
- C. Install in longest practical lengths; butt ends tight.
- D. Scribe to abutting surfaces.

3.5 FIELD QUALITY CONTROL

- A. Arrange for carpet manufacturer to provide field service specialist at commencement of installation to instruct installer in methods and to assure that project conditions are satisfactory.
- B. Review CRI 104 for guidelines on temperature, humidity, and ventilation and on "Protecting Indoor Installations."
- C. Do not install carpets over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive. Concrete slabs shall have Relative Humidity (RH) and pH range compliant to manufacturer's QC standards.

3.6 CLEANING

- A. Remove excess adhesive from floor, base and wall surfaces without damage.
- B. Clean floor and base surfaces in accordance with manufacturer's instructions.



- C. Use a commercial upright vacuum with a beater brush approved under the CRI Seal of Approval Green Label program for vacuuming of all carpet. For a list of approved vacuums visit www.carpet-rug.org.

3.7 PROTECTION

- A. Protect finished installation as instructed/deemed acceptable by Owner and manufacturer's recommendations.

END OF SECTION

SECTION 09 9100**PAINTING****PART 1 GENERAL**

1.1 SUMMARY

- A. Section includes surface preparation and field application of paint systems on exterior and interior substrates.

1.2 REFERENCES

- A. ASTM D16 - Standard Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. PDCA - Architectural Specifications Manual; Painting and Decorating Contractors of America.
- C. SSPC - Steel Structures Painting Manual; Steel Structures Painting Council.

1.3 DEFINITIONS

- A. Gloss Level 1: Not more than 5 units at 60 degrees and 1 to 2 units at 85 degrees.
- B. Gloss Level 2: 5 to 9 units at 60 degrees and 10 to 15 units at 85 degrees.
- C. Gloss Level 3: 10 to 15 units at 60 degrees and 15 to 30 units at 85 degrees.
- D. Gloss Level 4: 20 to 35 units at 60 degrees and 35 to 50 units at 85 degrees.
- E. Gloss Level 5: 40 to 50 units at 60 degrees.
- F. Gloss Level 6: 70 to 80 units at 60 degrees.
- G. Gloss Level 7: More than 80 units at 60 degrees.
- H. Blocking: Two painted surfaces sticking together such as a painted door sticking to a painted jamb.
- I. EG: Ethylene Glycol. Ethylene glycol is listed as a hazardous air pollutant (HAP) by the U.S. EPA.
- J. EPR: Environmental Performance Rating. Master Painters Institute (MPI) formula that relates to VOC, Performance of Category, Gloss and Appropriate specified use. Higher values equate to greater eco-efficiency.
- K. Mildew Resistant: Certified products are specially formulated with microbicial additives that resist mold, mildew, and algae growth on the paint film and inhibit growth of bacterial odors.
- L. MPI: Master Painters Institute. Organization that establishes architectural paint standards and quality assurance programs in North America. www.paintinfo.com.
- M. PDCA: Painting & Decorating Contractors of America. www.pdca.org.

- N. RAVOC: Reactivity adjusted VOC. "Reactivity" means the ability of a VOC to promote ozone formation.
- O. SSPC: The Society for Protective Coatings publishes Scopes of SSPC Surface Preparation Standards and Specifications. www.sspc.org.

1.4 SUBMITTALS

- A. Make submittals in accordance with Section 01 33 00.
- B. Product Data: For each type of product. Include preparation requirements and applicable instructions.

1.5 REGULATORY REQUIREMENTS

- A. Paint materials shall comply with applicable requirements of the Food and Drug Administration (FDA) for direct food contact surfaces.
- B. South Coast Air Quality Management District (SCAQMD) requirements for Volatile organic compounds (VOC) emission limits.

1.6 DELIVERY, STORAGE, AND PROTECTION

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include 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. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F and no more than 120 deg F, and as required by manufacturer's instructions.
- D. Maintain containers in clean condition, free of foreign materials and residue.
- E. Remove rags and waste from storage areas daily.

1.7 FIELD CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 105 deg F.
- B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.
- C. Painting contractor shall follow proper painting practices and exercise judgment based on his or her experience and project specific conditions as to when to proceed.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not apply coatings under environmental conditions outside manufacturer's absolute limits.
- B. Sequence application to the following:
 1. Do not apply finish coats until paintable sealant is applied.
 2. Back prime wood trim before installation of trim.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design Product: Subject to compliance with specified requirements, provide products listed from Dunn-Edwards Corp. for the paint category indicated.
- B. Products: Subject to compliance with specified requirements, available products that may be incorporated into the Work include, but are not limited to products listed in other Part 2 articles for the paint category indicated.

2.2 PAINT, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content: Products shall comply with VOC limits of SCAQMD and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - 1. Flat Paints and Coatings: 50 g/L.
 - 2. Nonflat Paints and Coatings: 50 g/L.
 - 3. Primers, Sealers, and Undercoaters: 100 g/L.
 - 4. Rust Preventative Coatings: 100 g/L.
 - 5. Floor Coatings: 50 g/L.
 - 6. Shellacs, Clear: 730 g/L.
 - 7. Shellacs, Pigmented: 550 g/L.
- C. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- D. Colorants: The use of colorants containing hazardous chemicals, such as ethylene glycol, is prohibited.
- E. Colors: As indicated in the finish schedule in the Drawings.

2.3 FOLLOWING ITEMS NOT TO BE PAINTED

- A. Brass valves, chromium or nickel-plated piping and fittings.
- B. Boiler control panels and control systems.
- C. Fabric connections to fans.
- D. Flexible conduit connections to equipment, miscellaneous nameplates, stamping and instruction labels and manufacturer's data.

- E. Mechanical and electrical utility lines, piping and heating and ventilation ductwork. in tunnels, underfloor excavated areas or crawl spaces, attic spaces and enclosed utility spaces.
 - F. Products and equipment having a complete factory finish.
 - G. Flag, floodlight, parking light poles and loudspeaker poles furnished with a galvanized finish, unless otherwise indicated.
 - H. Structural and miscellaneous, steel, open web steel joints and metal floor decking which will not be exposed in final construction, shall have no finish other than one coat of shop primer.
 - I. Hardboard covering on tops and backs of counters and benches.
 - J. Items specified with galvanized finish unless otherwise indicated. Refer to Preparation section when galvanized and painted are indicated.
 - K. Brass, bronze, aluminum, lead, stainless steel, and chrome or nickel-plated surfaces of materials and hardware.
 - L. Surfaces specifically scheduled or noted on the drawings not to be painted.
- 2.4 WOOD STAINS
- A. Interior: Old Masters, Stainless Interior Wiping Oil Stain (V-QYB & V-QYR Series).
 - B. Exterior: Okon, Weather Pro (OK-710).
- 2.5 WOOD TOPCOAT
- A. Acrylic Polyurethane: Cabot, Waterborne Polyurethane (808[X]-1).

PART 3 EXECUTION

- 3.1 EXAMINATION
- A. Verify existing conditions before starting work.
 - B. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.
 - C. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 - 1. Concrete: 12 percent.
 - 2. Masonry (Clay and CMU): 12 percent.
 - 3. Wood: 15 percent.
 - 4. Gypsum Board: 12 percent.
 - 5. Plaster: 12 percent.
 - D. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
 - E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

- F. Proceed with coating application only after unsatisfactory conditions have been corrected.
- G. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.
- B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
- C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.
- D. Marks: Seal with shellac those which may bleed through surface finishes.
- E. Impervious Surfaces: Remove mildew by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- F. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions, including pH testing to determine that alkalinity is within limits established by the manufacturer.
- G. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.
- H. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer, but not less than the following:
 - 1. SSPC -SP 1, "Solvent Cleaning."
 - 2. SSPC-SP 2, "Hand Tool Cleaning."
 - 3. [-OR-]
 - 4. SSPC-SP 3, "Power Tool Cleaning."
 - 5. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."
 - 6. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."
- I. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

- J. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints per ASTM 6386 and the American Galvanizers Association (AGA) Duplex Systems Guide.
 - 1. Passivation is not acceptable.
- K. Aluminum Substrates: Remove loose surface oxidation.
- L. Wood Substrates:
 - 1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
 - 2. Sand surfaces that will be exposed to view, and dust off.
 - 3. Prime edges, ends, faces, undersides, and backsides of wood.
 - 4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.
- M. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.
- N. Aluminum Surfaces Scheduled for Paint Finish: Remove surface contamination by steam or high pressure water. Remove oxidation with acid etch and solvent washing. Apply etching primer immediately following cleaning.
- O. Creosote Surfaces Scheduled for Paint Finish: Remove foreign particles to permit adhesion of finishing materials. Apply latex based sealer or primer.
- P. Concrete Floors: Remove contamination, acid etch, and rinse floors with clear water. Verify required acid-alkali balance is achieved. Allow to dry.
- Q. Gypsum Board Surfaces: Fill minor defects with filler compound. Spot prime defects after repair.
- R. Galvanized Surfaces: Remove surface contamination and oils and wash with solvent. Passivation is not acceptable. Apply coat of primer.
- S. Plaster Surfaces: Fill hairline cracks, small holes, and imperfections with latex patching plaster. Make smooth and flush with adjacent surfaces. Wash and neutralize high alkali surfaces.
- T. Metal Doors Scheduled for Painting: Prime metal door top and bottom edge surfaces.

3.3 PREPARATION OF EXISTING PAINTED SURFACES

- A. Examine surfaces to receive paint finish. Surfaces which are not properly prepared, and cleaned or which are not in condition to receive the finish specified, shall be corrected before paint is applied. No painting shall be done on existing painted surfaces until surfaces are approved by the [District][Owner's] Representative.
- B. Existing painted surfaces indicated to be painted, shall be prepared as follows:
 - 1. Wood, plaster and metal surfaces shall be washed with TSP (trisodium phosphate), to remove dirt, grease and other foreign materials and rinsed with clean water and then sandpapered and dusted off. Surfaces shall have wax completely removed before washing.

2. Checked, cracked, blistered, scaled, loose and alligatored paint on wood and metal surfaces shall have the paint removed down to original finished surface, then hand sanded and dusted clean.
3. Existing metal ceiling panels indicated to be painted, shall be prepared as follows:
 - a. Surface shall have paint completely removed by bead blasting with the smallest possible beads. Wash as indicated in Paragraph B.1.
 - b. Metal ceiling panels shall be shop painted for a quality finish.
4. Surfaces shall then be considered as new work.

3.4 APPLICATION

- A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
 1. Use applicators and techniques suited for paint and substrate indicated.
 2. The number of coats scheduled is the minimum number of coats required. Additional coat(s) shall be applied at no additional cost to the Owner, to completely hide base material, provide uniform color, and to produce satisfactory finish results.
 3. Apply coatings without thinning except as specifically required by label directions, or required by these specifications. In such cases, thinning shall be the minimum reduction permitted.
 4. Paint surfaces behind movable items and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items or furniture with prime coat only.
 5. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
 6. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
 7. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
 8. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers. Touch up prime coats applied by others as required ensuring an even primed surface before applying finish coat.
 9. For steel and hollow metal door and window frames paint entire exposed surface of frames and sashes when there isn't a factory finish.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

- E. Block Fillers: Provide block fill as scheduled to conform to the following PDCA Standard P12-05:
 - 1. Level 3 - Premium Fill: One or multiple coats of high performance block filler manufactured to be applied at a high dry film build. Block filler shall be back-rolled to eliminate voids and reduce the majority of the masonry profile depth.
- F. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
 - 1. Paint the following work where exposed in equipment rooms, and where exposed to view on exteriors:
 - a. Equipment, including panelboards[and switch gear].
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Tanks that do not have factory-applied final finishes.
 - h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - i. Paint both sides and edges of plywood backboards for electrical and telephone equipment before installing equipment.
 - 2. Paint the following work where exposed in occupied spaces:
 - a. Equipment, including panelboards.
 - b. Uninsulated metal piping.
 - c. Uninsulated plastic piping.
 - d. Pipe hangers and supports.
 - e. Metal conduit.
 - f. Plastic conduit.
 - g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
 - 3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces with one coat of flat black paint applied to visible surfaces.

3.5 FIELD QUALITY CONTROL

- A. Section 01 4500: Quality Control.
- B. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.6 CLEANING AND PROTECTION

- A. Collect waste material, which may constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- C. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- D. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- E. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.7 INTERIOR PAINTING SCHEDULE

- A. Gypsum Board Substrates:
 1. Premium Low VOC Acrylic System:
 - a. Prime Coat: Primer, acrylic, interior, Dunn-Edwards, ULTRA-GRIP Multi-Surface Primer UGPR00.
 - b. Topcoat: Acrylic, interior, eggshell, Dunn-Edwards, Endura-Coat Int/Ext ES L Base, (Gloss Level 3).
- B. Ferrous Metal Substrates:
 1. Premium Low VOC Acrylic over a Waterborne Alkyd Primer System:
 - a. Prime Coat: Primer, alkyd, anti-corrosive, for metal, Dunn-Edwards, ENDURAPRIME rust preventative primer ENPR00.
 - b. Topcoat: Acrylic, interior, semi-gloss, Dunn-Edwards, Endura-Coat Int/Ext ES M Base, (Gloss Level 5).
- C. Non-Ferrous Metal Substrates:
 1. Premium Low VOC Acrylic System:
 - a. Prime Coat: Primer, acrylic, interior, Dunn-Edwards, ULTRA-GRIP Multi-Surface Primer UGPR00.
 - b. Topcoat: Acrylic, interior, semi-gloss, Dunn-Edwards, Endura-Coat BM, (Gloss Level 5).
- D. Stainless Steel, Anodized Aluminum Substrates:
 1. Premium Low VOC Acrylic System:



- a. Prime Coat: Primer, acrylic, interior, Dunn-Edwards, ULTRA-GRIP Multi-Surface Primer UGPR00.
 - b. Topcoat: Acrylic, interior, semi-gloss, Dunn-Edwards, Endura-Coat BM, (Gloss Level 5).
- E. Wood Substrates:
- a. Prime Coat: Primer, acrylic, interior, Dunn-Edwards, ULTRA-GRIP Multi-Surface Primer UGPR00.
 - b. Topcoat: Acrylic, interior, eggshell, Dunn-Edwards, Endura-Coat Int/Ext ES L Base, (Gloss Level 3).

END OF SECTION

SECTION 10 2819
TUB AND SHOWER ENCLOSURES

PART 1 GENERAL

- 1.1 SUMMARY
- A. Section includes:
1. Frameless pivot shower door for alcove installation.
- 1.2 SUBMITTALS
- A. Submit per the requirements provided in Section 01 3300.
- B. Product Data: Manufacturer's data sheets, including glass thickness and hardware finish.
- C. Shop Drawings: Coordination with finished opening dimensions (to be measured after tile installation).

PART 2 PRODUCTS

- 2.1 MANUFACTURERS
- A. Basis-of-Design: DreamLine Elegance-LS (Model: SHDR-4334000-01)
- 2.2 MATERIALS & COMPONENTS
- A. Glass: Premium 3/8-inch (10mm) thick certified clear tempered glass.
1. Coating: Factory-applied ClearMax water-repellent and stain-resistant coating.
- B. Hardware: Solid brass construction.
1. Finish: Polished chrome
2. Pivot System: Self-closing hardware
3. Handle: Back-to-back square handle.
- C. Wall Profiles: Anodized aluminum with up to 1-inch adjustment per side for width or out-of-plumb conditions.
- D. Size: 34 to 36 inches wide by 72 inches high.
1. Confirm dimensions after finish tile installation.

PART 3 EXECUTION

- 3.1 INSTALLATION
- A. Field Measurement: Measure door opening after walls are finished to ensure accuracy.
- B. Verify that project conditions are suitable for installation.
- C. Install per Manufacturer's instructions.

- D. Apply silicone sealant per manufacturer's instructions. Allow 24 hours cure time before use.

3.2 CLEANING

- A. Clean work under provisions of Section 01 7400.

3.3 PROTECTION

- A. Protect work of other trades or existing adjacent surfaces or areas against damage. Correct damage by cleaning, repairing, replacing and recoating as acceptable to the University Representative. Leave in an undamaged condition.
- B. Protect surfaces and fixtures from damage resulting from this installation.
- C. At the end of each working day keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.
- D. Remove existing components, fittings, and fastenings, prior to the installation of new components.
- E. Take all necessary precautions to secure all materials, equipment, and stock after the completion of work each day to prevent damages/vandalism due to accessibility of materials to non-authorized personnel.

END OF SECTION

SECTION 12 2113
VERTICAL LOUVER BLINDS

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
1. Vertical slat louver blinds.

1.2 SUBMITTALS

1. Submit under provisions of Section 01 3300.
2. Product Data indicating physical and dimensional characteristics, support system, and operating features.
3. Shop Drawings indicating installation locations for each product provided.
4. Material Samples of available colors and textures for Architect's selection.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver blinds wrapped and crated in a manner to prevent damage to components or marring of surfaces.
- B. All delivered components shall be clearly marked and labeled for each window location.
- C. Store in a clean, dry area, laid flat and blocked off ground to prevent sagging, twisting or warping.

1.4 WARRANTY

- A. Provide Manufacturer's lifetime warranty in accordance with the requirements of the Contract documents; submit all warranty information to the District. All work shall follow the requirements of this section and the recommendations of the manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Skandia Window Fashions.

2.2 VERTICAL BLIND SYSTEM

- A. Headrail: De-Light Heavy Duty Aluminum track
1. Extruded aluminum.
 2. White finish.
- B. Type V-1 (at Sliding Doors): Skandia Conquest Plus
1. Material: 3.5" Curved PVC louvers

2. Texture: As selected by Architect.
 3. Color: As selected by Architect.
- C. Type V-2 (at Windows): Skandia Infusions
1. Material: 3.5" Curved PVC louvers
 2. Texture: As selected by Architect.
 3. Color: As selected by Architect.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that openings are ready to receive the work.
- B. Do not commence fabrication until field measurements are confirmed.
- C. Ensure structural supports are correctly placed.
- D. Beginning of installation means installer accepts existing surfaces.

3.2 INSTALLATION

- A. Install blinds in accordance with manufacturer's instructions.
- B. Secure in place with concealed mechanical fasteners.

3.3 TOLERANCES

- A. Maximum Variation of Gap at Window Opening Perimeter: ¼ inch.
- B. Maximum Offset From Level: 1/8 inch.

3.4 ADJUSTING

- A. Adjust blinds for smooth operation.

3.5 CLEANING

- A. Clean work under provisions of Section 01 7400.

3.6 PROTECTION

- A. Protect work of other trades or existing adjacent surfaces or areas against damage. Correct damage by cleaning, repairing, replacing and recoating as acceptable to the University Representative. Leave in an undamaged condition.
- B. Protect surfaces, equipment and fixtures from damage resulting from this installation.
- C. At the end of each working day keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.
- D. Place all waste materials in containers and remove daily from the site.
- E. Remove existing components, fittings, and fastenings, prior to the installation of new components.
- F. Provide signs, barricades, and other devices required for safety during all work.

- G. Take all necessary precautions to secure all materials, equipment, and stock after the completion of work each day to prevent damages/vandalism due to accessibility of materials to non-authorized personnel.

END OF SECTION

SECTION 12 3661.16
SOLID SURFACING COUNTERTOPS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid surfacing countertops.
 - 2. Setting materials and accessories.
- B. Related Sections:
 - 1. Section 07 9200: Joint Sealants
 - 2. Section 10 2813: Toilet Accessories

1.2 SUBMITTALS

- A. Make submittals in accordance with Section 01 3300.
- B. Shop Drawings: Include layout, dimensions, materials, finishes, cutouts, and attachments.

1.3 QUALITY ASSURANCE

- A. Manufacturer Qualifications:
- B. Minimum 10 years documented experience in manufacture of solid surfacing materials.
- C. Fabricator and Installer Qualifications: Minimum 2 years documented experience in work of this Section.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Comply with manufacturer's recommendations for shipping and handling panels to preclude breakage or damage. Lift panels individually to avoid scratching. Do not permit surfacing panel decorative surfaces from sliding against one another. For handling, a suitable gripping device, such as a suction pad, is acceptable.
- B. Store panels and related materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer. Keep panels wrapped inside the original packaging (plastic lining) until time of installation. Store surfacing panels on flat rigid pallets at least the same sizes as the panels to avoid sliding and unstable positioning; 24 inch maximum spacing between supporting boards. Place adequately sized protective paper between the pallet and panels and on the top panel.

1.5 PROJECT CONDITIONS

- A. Verify actual measurements and openings by field measurements before fabrication; show recorded measurements on shop drawings. Coordinate field measurements and fabrication schedule with construction progress to avoid construction delays.

1.6 WARRANTY

- A. Provide manufacturer's 10 year warranty against defects in materials and workmanship.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Wilsonart LLC

2.2 SOLID SURFACING SHEET

- A. Thickness: ½ inch, nominal.
- B. Panel Dimensions: As indicated in Drawings and verified in field.
- C. Physical Characteristics:
1. Modulus of Elasticity: Minimum 12,000 Mpa; ASTM D 790.
 2. Flexural Strength: Minimum 180 Mpa (MD) and 130 (CD); ASTM D 790.
 3. Tensile Strength: Minimum 140 Mpa (MD) and 100 (CD); ASTM D 638.
 4. Density: Minimum 1.40 g/cm²; ASTM C 792.
 5. Surface Burning Characteristics: Class 2/B; ASTM E 84.
 6. Lightfastness: Minimum 4; ISO 4586.
 7. Impact Resistance, Large Diameter Ball: 0.500 inch; ISO 4586.
 8. Stain Resistance: Minimum rating of 5 for stains 1-10 and minimum rating of 3 for stains 11-15; ISO 4586.
 9. Wet Heat Resistance: Minimum rating of 5; ISO 4586.
 10. Dry Heat Resistance: Minimum rating of 4; ISO 4586.
- D. Color: Volkas Marble (TS504)
- E. Finish: Luster
- F. Edge Detail: Square

2.3 ACCESSORY MATERIALS

- A. Joint Adhesive: As recommended by Manufacturer.
- B. Elastomeric Sealant: As recommended by Manufacturer.
- C. Panel Overhang Supports: As recommended by Manufacturer.

2.4 FABRICATION

- A. General: Fabricate components in shop, to greatest extent practicable, in sizes, shapes, and edge profiles indicated according to approved shop drawings.
- B. Provide holes and cutouts for plumbing fixtures and accessories indicated on approved shop drawings. Rout cutouts and finish edges smooth.
- C. Use only saws, routers, and sanders as recommended by panel manufacturer. For sanding/finishing, use a random orbital sander and proper grit; only sand at radius profiles, not decorative faces.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine the underlying support and conditions that could adversely affect the work of this Section.
- B. The underlying supports must be sound, level, smooth, and free from dust or other surface contaminants.
- C. Commencement of work will constitute acceptance of underlying support and conditions to receive the work.

3.2 INSTALLATION

- A. General: Install panels assemblies plumb, level, and true according to approved shop drawings and panel manufacturer's published installation instructions. Use only saws, routers, and sanders as recommended by manufacturer. For sanding/finishing, use a random orbital sander and proper grit; only sand at radius profiles, not decorative faces.
 - 1. Fasten Thinscape Composite Tops panels to base cabinets or other supporting substrates with the specified sealant, additional mechanical fasteners are recommended for unoccupied and unacclimated installations.
 - 2. Cutouts: For top mount or underside mount sinks, make final cuts with router. For appliance cutouts, use router only; install Wilsonart Heat Tape as recommended by manufacturer.
 - 3. Panel Edge Detail: Form required edge profile(s) and sand smooth.
- B. Joint Seams: Clean seam surfaces with denatured alcohol. Install biscuit slots and biscuits for mitered corners if required. Provide 1/32 inch seam gap, install protective clearing masking tape or film on panel surfaces adjoining seams, and apply specified seam adhesive. Seams to be inconspicuous in completed work. Seams in locations shown on approved shop drawings and acceptable to manufacturer.
 - 1. After seam adhesive is applied, join seam surfaces together and clamp panel surfaces in position until adhesive sets. Promptly remove excess adhesive and clean surfaces with denatured alcohol.
 - 2. For mitered corners, cut seam surfaces with biscuit cutter and install biscuits prior to seam adhesive application. Maintain minimum three inch clearance between biscuit slots and panel front and back edges.
- C. Fill gaps between panel and terminating substrates with specified silicone sealant.

3.3 REPAIRS

- A. Remove and replace Thinscape Composite Tops that are damaged and cannot be satisfactorily repaired.

3.4 CLEANING AND PROTECTION

- A. Clean panels according to manufacturer's published maintenance instructions with cleaners acceptable to manufacturer. Completely remove excess adhesives and sealants from finished surfaces.

END OF SECTION

SECTION 22 1319.13
TILE FLOOR AND SHOWER DRAINS

PART 1 GENERAL

- 1.1 SECTION INCLUDES
- A. Tile Floor and Shower Drains.
- 1.2 RELATED SECTIONS
- A. Section 09 3000: Tiling.
- B. Section 09 3050: Tile Setting Materials and Accessories.
- 1.3 REFERENCES
- A. IAPMO IGC 195: Interim Guide Criteria for Floor Drain with Integrated Bonding Flange.
- B. CSA B79-08: Floor, Area, and Shower Drains, and Cleanouts for Residential Construction.
- 1.4 SUBMITTALS
- A. Submit under provisions of Section 01 3300.
- B. Product Data: Manufacturer's data sheets on each product to be used.
- C. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
- D. Warranty documents showing duration and scope to be submitted with product submittals.
- 1.5 QUALITY ASSURANCE
- A. Installer Qualifications: Company specializing in performing the work of this section with a minimum of five years' experience.
- B. Source Limitations for Materials and Accessories: Obtain product of a uniform quality for each premanufactured tile profile, mortar, waterproofing, and uncoupling membrane for each application condition from a single manufacturer, to maintain the installation system and provide a multi-product warranty from the selected manufacturer.
- C. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
1. See Mock-up requirements in Section 09 3000.
2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.
- D. Preinstallation Conference: Conduct conference at the Project site.

1. Convene one week prior to commencing work of this section.
 2. Require attendance of installation material manufacturer, plumber, waterproofing installer, tile installer and installers of related work. Review installation procedures and coordination required with related work.
 3. Meeting agenda includes but is not limited to:
 - a. Drain location.
 - b. Prefabricated substrate requirements.
 - c. Drainage membrane requirements.
 - d. Tile and installation material compatibility.
 - e. Manufacturer and installer warranty duration and scope covered by warranty.
 - f. Edge protection, transition, and pre-fabricated movement joint profiles.
 - g. Waterproofing techniques.
 - h. Crack isolation techniques.
- 1.6 DELIVERY, STORAGE, AND HANDLING
- A. Store products in manufacturer's unopened packaging until ready for installation.
 - B. Protect materials from exposure to moisture. Do not deliver until after wet work is complete and dry.
 - C. Store materials in a dry, warm, and ventilated weather-tight location.
- 1.7 PROJECT CONDITIONS
- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
- 1.8 WARRANTY
- A. Provide sample warranty during submittal process.
 - B. Acknowledge warranty duration and scope covered by warranty.
- 1.9 COORDINATION
- A. Coordinate Work with other operations and installation of floor finish materials to avoid damage to installed materials.

PART 2 PRODUCTS

- 2.1 MANUFACTURERS
- A. Basis-of-Design Manufacturer: Schluter Systems, L.P.
- 2.2 FLOOR DRAIN WITH INTEGRATED BONDING FLANGE
- A. When a two stage drain is present on site or a two stage drain is required for the specified drain grate specified the KERDI-DRAIN ADAPTER KIT is to be installed.

- B. Schluter-KERDI-DRAIN: Plastic floor drain 11-25/32 inch (300 mm) diameter, trapezoid-perforated, integrated bonding flange.
 - 1. Polypropylene Fleece: Thermally laminated to surface and hubbed connection to 2-inch (50 mm) drainpipe.
 - 2. Grate Assembly: Includes 4 x 4 inch (102 x 102 mm) square grate, height adjustment collar, and lateral adjustment ring with trapezoid perforations.
 - 3. Listed by UPC: Meets requirements of "International Association of Plumbing and Mechanical Officials Interim Guide Criteria for Floor Drain with Integrated Bonding Flange" (IGC 195).
 - 4. Listed by TCNA referenced in method B422 and B422C of the Tile Council of North America Handbook for Ceramic Tile Installation.
- C. Schluter-KERDI-DRAIN ADAPTER KIT: Stainless steel adaptor ring with over-molded santoprene gasket. 11-13/16 inch (300 mm) diameter sloped integrated bonding flange, with thermally laminated polypropylene fleece, and grate assembly.
- D. Grate Assembly: Grate, height adjustment collar, and lateral adjustment ring with trapezoid perforations.
- E. Drain Detail: As referenced in method B422 and B422C of the Tile Council of North America Handbook for Ceramic Tile Installation.
- F. Drain Type: As referenced in methods B422 and B422 STONE in the Tile Council of North America Handbook for Ceramic, Glass, and Stone Tile Installation.
- G. Grate Type, Material and Finish:
 - 1. Classic: Arc-shaped and trapezoid-shaped openings.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify drain location and compatibility with drain system specified.
- C. If substrate preparation is the responsibility of another installer, notify the Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces by removing all debris, sharp edges and protrusions that could damage the waterproof integrity of the system.
- C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Coordinate Work with installation of prefabricated shower trays, load-bearing bonded waterproof membrane meeting ANSI A118.10S (Sheet Membrane),



drainage membrane and other components specified in Section 09 30 00 and with setting materials for floor finish materials specified in Section 09 30 50.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION