CAPITAL ASSETS
1917 Harden Street
Columbia, South Carolina, 29204
(803) 254-3886

ADDENDUM # 01

TO: ALL BIDDERS

RE: CHANGES TO PROJECT MANUAL AND DRAWINGS DATED JUNE 6, 2022

DATE: JULY 5, 2022

SUBJECT: COLUMBIA SFH REHAB PHASE I
COLUMBIA, SC
ARCHITECT PROJECT #22-12740

PLEASE ATTACH THIS ADDENDUM TO THE PROJECT MANUAL FOR THIS PROJECT AND KINDLY TAKE SAME INTO CONSIDERATION IN PREPARING YOUR CONSTRUCTION COST BREAKDOWN.

1919 ARCHITECTS

RONALD G. BILLY JR.

THIS ADDENDUM CONSISTS OF 1 (ONE) PAGE
NOTICE TO BIDDERS
SECTION 06 6113 SIMULATED STONE FABRICATIONS

ADDENDUM # 01

CHANGES TO THE PROJECT MANUAL DATED: 06/06/2022

1. Notice to Bidders delete in its entirety and replace with the attached Notice to Bidders.
2. Add Section 06 6113 Simulated Stone Fabrications. See attached.
3. Add Section 09 6519.23 Resilient Tile Flooring. See attached.

END ADDENDUM # 01

COLUMBIA HOUSING AUTHORITY
NOTICE TO BIDDERS

Columbia Housing Authority will receive sealed bids for Project named Columbia Scattered Site Rehab Phase I.

Columbia, South Carolina

Bids will be received until 1:00 p.m. local time on the 11th day of August 2022 at the offices of Columbia Housing Authority located at 1917 Harden Street, Columbia, South Carolina, 29204. There will not be any in person bid opening. No in person drop-offs of bids.

A pre-bid meeting shall take place on the 30th day, of June 2022 at 1:00 p.m. at Columbia Housing Authority located at 1917 Harden Street, Columbia, South Carolina, 29204.

Bidders to obtain bid documents by contacting the architect at info@1919architects.com or the Columbia Housing Authority.

Bids will be e-mailed to jgibbs@columbiahousingsc.org or mail a thumb drive to 1917 Harden Attn: Juila Gibbs and clearly marked "**Columbia SFH Rehab Phase I".** Please mark mailed envelopes with Columbia SFH Rehab Phase 1.

Bid Bond executed by the bidder and acceptable sureties in an amount of not less than 5% of the base bid shall be submitted with each bid. Failure to submit an acceptable bid bond with the bid will result in the rejection of the bid.

Attention is called to the provisions for Equal Employment Opportunity and payment of not less than the minimum salaries and wages set forth in the bid documents. This project will require compliance to the Davis-Bacon Wage Decisions and the Section 3 requirements as listed in the contract documents.

All Contractors who are awarded construction related contracts must document Affirmative Action to ensure Equal Opportunity in Employment. This documentation is subject to review by the Regional Office of the Department of Labor. As a part of normal contract administration, Columbia Housing Authority is responsible for determining the Contractor's compliance with the Equal Employment Opportunity Clause and Affirmative Action Requirements as well as the Contractor's performance in executing those requirements.

All MBE/DBE/WBE Contractors, Subcontractors and Suppliers are encouraged to participate on Columbia Housing Authority projects and the housing authority has established a 30% goal.

Columbia Housing Authority reserves the right to accept or reject any and all bids and to waive any and all technicalities.

No bid shall be withdrawn for a period of (90) calendar days subsequent to the opening of the bids without the written consent of Columbia Housing Authority.

COLUMBIA HOUSING AUTHORITY

SECTION 06 61 13 – SIMULATED STONE FABRICATIONS

Part 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Cambria Quartz Surfacing.

B. Related Sections:

1. Administrative, procedural and temporary work requirements.
    i. Section 12 3530 - Residential Casework.

1.2 REFERENCES

A. ASTM International (ASTM):

1. ASTM C97; Moisture Absorption.
2. ASTM C99; Modulus of Rupture.
3. ASTM C170; Compressive Strength.
4. ASTM C501; Abrasion Resistance.
5. ASTM C482; Bond Strength.
6. ASTM C484; Thermal Shock.
7. ASTM C531; Coefficient of Thermal Expansion.
8. ASTM C648; Breaking Strength of Tile.
9. ASTM C1026; Resistance to Freeze-Thaw Cycling.
10. ASTM E84; Surface Burning Characteristics.
11. ASTM E662; Smoke Density.
12. ASTM 650-04; Chemical Resistance.

B. American National Standards Institute (ANSI):

1. ANSI Z124.6; Stain Resistance.
2. ANSI A137.1; Wet/Dry Dynamic Coefficient of Friction.

C. Cambria installation procedures.

1.3 SUBMITTALS

A. Product Data:

1. Cambria Product Specification Sheet.
2. Cambria Care and Maintenance Information.
3. Cambria Full Lifetime Warranty.

B. Samples:

1. Submit minimum of 3"x3" Cambria samples.

C. Test and Evaluation Reports: Showing compliance with the specified performance characteristics and physical properties.

D. Adhesive:
    1. Submit two samples of adhesive joint for each Cambria Design™ selected.

E. Shop Drawings: Double Treeline Edge (A+R) edge, and show the following:
    1. Drawings to include countertop layout, dimensions, required locations of support and blocking member, edge profiles, cutouts, and attachments.

F. Fabricator/Installer Qualifications:
    1. Work of this section shall be performed by a fabricator/installer approved by Cambria.
    2. Use of digital templating equipment and slab layout technology prior to fabrication and installation of all products.
        i. Slabsmith™.
    3. Minimum of five (5) years of documented experience with commercial fabrication/installation of quartz surfaces.

1.4 QUALITY ASSURANCE

A. Manufacturers' Qualifications:
    1. All products must be produced in US production facility.
    2. Quartz producer must have 15 years of documented experience in quartz design, production, and innovation in the US.

B. Fabricator/Installer Qualifications:
    1. Work of this section shall be performed by a fabricator/installer approved by Cambria.
    2. Use of digital templating equipment and slab layout technology prior to fabrication and installation of all products.
        i. Slabsmith™.
    3. Minimum of five (5) years of documented experience with commercial fabrication/installation of quartz surfaces.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Packaging, Shipping, Handling, and Unloading: Observe Cambria's recommendations and handle in a manner to prevent breakage. Brace parts if necessary. Transport in the near vertical position with finished face toward

finished face. Do not allow finished surfaces to rub during shipping and handling.

B. Storage and Protection:
    1. Store in racks in near vertical position.
    2. Store inside away from direct exposure to sunlight.

C. Damaged materials shall be removed from the jobsite.

1.6 JOBSITE REQUIREMENTS

A. PPE must be used as required and directed by OSHA standards governing your industry.

B. General Contractor shall provide access to electrical power.

1.7 WARRANTY

A. Cambria Full Lifetime Warranty.
    1. Fully transferable, non-prorated warranty.

Part 2 - Products

2.1. MANUFACTURERS

A. Acceptable Manufacturer:
    1. Cambria.

B. No substitutions.

2.2. MATERIALS

A. Material:
    1. Cambria Quartz surfacing.

B. Construction:
    1. Quartz, binder, and pigment.

C. Identification:
    1. Material shall be labeled with Cambria's identification/logo.

D. Thickness:
    1. 2 cm.

E. Design: Cambria Classic Collection

F. Finish: Polish Finish.

G. Exposed Edges and Corners:

1. Countertop profile Double Treeline Edge (A+R)

H. Performance:
   1. ASTM C97; Moisture Absorption: typical results negligible.
   2. ASTM C99; Modulus of Rupture: typical results 6,800 psi.
   3. ASTM C170; Compressive Strength: typical results 24,750 psi.
   4. ASTM C501; Abrasion Resistance: typical results 223.
   5. ASTM C482; Bond Strength: typical results 205 psi.
   6. ASTM 484; Thermal Shock: Passes 5 cycles.
   7. ASTM C531; Coefficient of Thermal Expansion: typical results $1.2x10^{-5}$ inch/°F.
   8. ASTM C648; Breaking Strength of Tile: typical results 3,661 lbf.
   9. ASTM C1026; Resistance to Freeze-Thaw Cycling: Unaffected 15 cycles.
   10. ANSI A137.1; Wet Dynamic Coefficient of Friction [0.34 polish] / [0.47 matte].
   11. ANSI A137.1; Dry Dynamic Coefficient of Friction [0.72 polish] / [0.80 matte].
   12. ASTM E84; Surface Burning Characteristics: typical results 17 (Class A/1 Rating).
   13. ASTM E662; Smoke Density: Flaming 196, Non-flaming 69.
   14. ANSI Z124.6; Stain Resistance: Unaffected.
   15. ASTM 650-04; Chemical Resistance: Unaffected.

2.3. ACCESSORIES

A. Mounting Adhesive:
   1. 50-year 100% silicone or epoxy adhesive.
   2. Acceptable silicone manufacturers:
      i. Tremco
   3. Acceptable epoxy manufacturers:
      i. Cambria Adhesive.

B. Quartz Surface Adhesive:
   1. Provide epoxy or acrylic adhesive of a type recommended by manufacturer for application and conditions of use.
   2. Acceptable manufacturers:
      i. Cambria Adhesive.
   3. Adhesive which will be visible in finished work shall be tinted to match quartz surface.

C. Joint Sealant:
   1. Clear sealant of type recommended by manufacturer for application and use.

2. Acceptable manufacturers:
    i. Dow Corning.
    ii. GE Sealants.

D. Solvent: Denatured alcohol for cleaning to assure adhesion of adhesives and sealants.

E. Cleaning Agents: Mild soap and water.

2.4. FABRICATION

A. Layout:
1. Layout surface to minimize joints. Joint width should not be larger than 1/32".
2. Work with an approved Cambria fabricator who utilizes digital images for seam coordination, product flow, and bookmatch material (i.e., Slabsmith™).

B. Inspection of Materials:
1. Inspect materials for imperfections prior to fabrication.
    i. Variations in distribution of aggregate and color that occur in Cambria product are within manufacturer's tolerance and do not constitute defective product.

2. Removal of the protective plastic film is required.

C. Tools: Cut and polish with water-fed powered tools.

D. Cutouts:
1. Cutouts shall have a minimum of ¼" (6.35mm) radius.
2. Where edges of cutouts will be exposed in finished work; polish edges.

E. Mitered Edge: Miter Cambria Quartz surfacing material as required following procedures recommended by the manufacturer.

PART 3 - EXECUTION

3.1. PRE-INSTALLATION EXAMINATION.

A. Site Verification:
1. Verify dimensions by field measurements prior to installation.
2. Verify that substrates supporting Cambria Quartz surfaces are plumb, level, and flat to within 1/8 inch in 10 feet and that all necessary supports and blocking are in place.

3. Support structure shall be secured to adjoining units, back wall, and/or flooring.

B. Inspection of Cambria Quartz surfacing:
    1. Inspect materials for imperfections prior to installation.

3.2. PREPARATION

A. Prepare Surface:
    1. Clean Cambria Quartz surfacing prior to installation.

B. Protection of Cambria Quartz surfacing:
    1. Protect finished surfaces from damage. Apply protection where necessary. Take necessary precautions to prevent dirt, grit, dust, and debris from other trades from contacting the surface by covering the top and exposed edge profiles after installation is completed.

3.3. INSTALLATION

A. Install materials in accordance with Cambria's procedures and approved shop drawings.

B. Preliminary Installation:
    1. Position materials to verify the correct size and orientation (bookmatch material).
    2. If size adjustments, or additional fabrication is necessary, use water-fed tools. Protect jobsite and surface from dust and water. Perform work away from installation site if possible.
    3. Allow gaps for expansion of not less than 1/8" (1.5mm) per 10 feet when installed between walls or other fixed structures.

C. Permanent Installation:
    1. After verification of fit and finish, clean substrate; remove loose and foreign matter which may interfere with adhesion. Clean Cambria Quartz surfacing backside and joints with denatured alcohol.
    2. Horizontal surface: Apply continuous bead of 100% silicone at the intersection point of the Cambria Quartz surfacing and the substrate or cabinet. This bead will be continuous throughout the entire perimeter.
    3. Vertical surface: Apply continuous bead of mounting adhesive around the perimeter of the vertical piece(s). In addition, apply ¼" mounting adhesive bead every 8" on vertical center.
    4. Install Cambria Quartz surfacing plumb, level, square, and all on the same plane.
    5. Align adjacent pieces in same plane.

D. Joints:
    1. Joints Between Adjacent Pieces of Cambria Quartz surfacing:
        i. Joints shall be flush, tight fitting, level, and clean.
        ii. Securely join adjacent pieces with Cambria Adhesive.
        iii. Fill joints level to polished surface.
        iv. Secure adjacent Cambria Quartz surfacing with pneumatic vacuum clamps until adhesive hardens.
    2. Joints between Cambria Quartz surfacing and wall;
        i. Seal joints with 50-year 100% silicone sealant.

3.4. REPAIR

A. Perform any finish work necessary and replace any damaged material.

3.5. CLEANING

A. Remove all masking, all excessive adhesive, and all excess sealants.

B. Thoroughly clean all exposed surfaces with denatured alcohol to remove all debris.

3.6. PROTECTION

A. Protect installed fabrications with non-staining sheet coverings.

End of section

SECTION 09 65 19.23 Resilient Tile Flooring

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:
    1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.
B. Related Documents
    1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.
C. Related Sections:
    1. Other Division 9 sections for floor finishes related to this section but not the work of this section
    2. Division 6 Wood and Plastics; not the work of this section
    3. Division 7 Thermal and Moisture Protection; not the work of this section

1.02 REFERENCES

A. Armstrong Flooring Technical Manuals
    1. Armstrong Flooring Guaranteed Installation Systems manual, F-5061
    2. Armstrong Flooring Maintenance Recommendations and Procedures, manual, F-8663.
B. ASTM International:
    1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
    2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
    3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
    4. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
    5. ASTM F 1700 Standard Specification for Solid Vinyl Tile
    6. ASTM F 1861 Standard Specification for Resilient Wall Base
    7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
    8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes
C. National Fire Protection Association (NFPA):
    1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
    2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.
B. Administrative Requirements
    1. Pre-installation Testing: Conduct pre-installation testing as follows: Moisture tests, bond test, and pH test.

C. Sequencing and Scheduling
    1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
    2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 SUBMITTALS

A. Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions (latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. for flooring and accessories.

B. Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.

C. Submit Safety Data Sheets (SDS) available for adhesives, moisture mitigation systems, primers, patching/leveling compounds, floor finishes (polishes) and cleaning agents and Material Information Sheets for flooring products.

D. If required, submit the manufacturer's certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.

E. Closeout Submittals: Submit the following:

    1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.

    2. Warranty: Warranty documents specified herein

1.05 QUALITY ASSURANCE

A. Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including moisture mitigation systems, primers, leveling and patching compounds, and adhesives.

B. Select an installer who is experienced and competent in the installation of Armstrong resilient solid vinyl tile flooring and the use of Armstrong Flooring subfloor preparation products.

    1. Engage installers certified as Armstrong Commercial Flooring Certified Installers

    2. Confirm installer's certification by requesting their credentials

C. Fire Performance Characteristics: Provide resilient tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:

    1. ASTM E 648 (NFPA 253) Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I

    2. ASTM E 662 (NFPA 258) (Smoke Generation) Maximum Specific Optical Density of 450 or less

    3. CAN/ULC-S102.2 – Flame Spread Rating and Smoke Developed – Results as tested

1.06 DELIVERY, STORAGE AND HANDLING

A. Comply with Division 1 Product Requirements Sections

B. Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

D. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 PROJECT CONDITIONS

A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65ºF (18ºC) and a maximum temperature of [100ºF (38ºC)][85ºF (29ºC)] for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55ºF (13ºC) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Flooring Guaranteed Installations Systems manual, F-5061 for a complete guide on project conditions.

1.08 LIMITED WARRANTY

A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.

B. Limited Warranty Period: 10 years for Vivero .

C. The Limited Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

D. For the Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

1.09 EXTENDED SYSTEM LIMITED WARRANTY

A. Resilient Flooring System: Submit a written warranty executed by the manufacturer, agreeing to repair or replace system (subfloor preparation products, adhesive, and floor covering) that fails within the warranty period.

B. Limited Warranty Period: 10 years on top of the Resilient Flooring Limited Warranty

C. S-453 Level Strong™ cement based self-leveling compound and S-456 Patch Strong™ flexible patching and smoothing compound.

D. The installation of an Armstrong Flooring product along with the recommended Armstrong Flooring adhesive, as well as any one of the Strong System subfloor preparation products listed above, provides 10 additional years of limited warranty coverage. The Strong System limited warranty covers the installation integrity for the length of the flooring product warranty plus 10 years. In order to qualify for the Strong System Warranty, any subfloor preparation product needed for an installation must be an Armstrong Flooring product.

E. For the System Limited Warranty to be valid, this product is required to be installed using the appropriate Armstrong Flooring Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

F. When Armstrong Flooring Strong System subfloor preparation products are used with other manufacturers' floor coverings, adhesives, or other subfloor preparation products, Armstrong Flooring warrants our products to be free from manufacturing defects from the date of purchase through the limited warranty period of 15 years.

1.10 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials from same production run as products installed. Packaged with protective covering for storage and identified with appropriate labels.

1. Quantity: Furnish quantity of flooring units equal to 5% of amount installed.
2. Delivery, Storage and Protection: Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Resilient tile flooring, adhesives and subfloor preparation products and accessories:

1. Armstrong Flooring Inc., 2500 Columbia Avenue, Lancaster, PA 17604, www.armstrongflooring.com/commercial
2. Manufacturer must have a headquarters in the United States of America

2.02 RESILIENT TILE FLOORING MATERIALS

A. Luxury Solid Vinyl Tile Flooring American Personality 12.

1. Description: A layered construction consisting of a tough, clear, vinyl wear layer protecting a high-fidelity print layer on a solid vinyl backing. Protected by a UV-cured polyurethane finish, the wear surface is embossed with different textures to enhance each of the printed visuals. Colors are insoluble in water and resistant to cleaning agents and light.
2. Luxury Solid Vinyl Tile shall conform to the requirements of ASTM F 1700, "Standard Specification for Solid Vinyl Tile", Class III, Type B – Embossed Surface.
3. Pattern and Color: **Color selected by architect.**
4. Size: 48 in. x 6.5 in. (1219 mm x 165 mm)
5. Thickness: 0.080 in.

2.03 PRODUCT SUBSTITUTION

A. Substitutions: No substitutions permitted because of the specific attributes listed in Section 2.02.

2.05 ADHESIVES

A. Provide Armstrong S-543 Commercial Sheet Flooring and LVT Adhesive for field areas as recommended by the flooring manufacturer.

2.06 ACCESSORIES

A. For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment and or S-453 Level Strong™ cement based self-leveling compound.

B. Provide transition/reducing strips tapered to meet abutting materials.

C. Provide threshold of thickness and width as shown on the drawings.

D. Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.

E. Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).

B. Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.

C. Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

D. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

E. Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

F. Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 PREPARATION

A. Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong Flooring S-184 Fast-Setting Cement-Based Patch and Underlayment or S-194 Cement-Based Patch, Underlayment and Embossing Leveler / S-195 Underlayment Additive

or S-453 Level Strong™ cement based self-leveling compound as recommended by the flooring manufacturer. Refer to Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

B. Subfloor Cleaning: The surface shall be free of dust, solvents, varnish, paint, wax, oil, grease, sealers, release agents, curing compounds, residual adhesive, adhesive removers and other foreign materials that might affect the adhesion of resilient flooring to the concrete or cause a discoloration of the flooring from below. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Spray paints, permanent markers and other indelible ink markers must not be used to write on the back of the flooring material or used to mark the concrete slab as they could bleed through, telegraphing up to the surface and permanently staining the flooring material. If these contaminants are present on the substrate they must be mechanically removed prior to the installation of the flooring material. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

C. When using S-288 Adhesive, perform subfloor moisture testing in accordance with ASTM F 2170, “Standard Test Method for Determining Relative Humidity in Concrete Slabs Using *in-situ* Probes” and Bond Tests as described in publication F-5061, "Armstrong Flooring Guaranteed Installation System," to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. Internal relative humidity of the concrete shall not exceed 90%. MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs. On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained.

D. Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.

E. Wood subfloors: Armstrong resilient floors are recommended on suspended wood subfloors with a 1/4" underlayment (see product installation systems for exceptions) and a minimum of 18" of well-ventilated air space below. Armstrong Flooring does not recommend installing resilient flooring on wood subfloors applied directly over concrete or on sleeper-construction subfloors. Loading requirements for subfloors are normally set by various building codes on both local and national levels. Trade associations such as APA–The Engineered Wood Association provide structural guidelines for meeting various code requirements. Subfloor panels are commonly marked with span ratings showing the maximum center-to-center spacing in inches of supports over which the panels should be placed.

    1. Refer to the Armstrong Flooring Guaranteed Installation Systems manual, F-5061 and ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use under Resilient Flooring for additional information.

F. Wood subfloors - Surface Cleaning: Make subfloor free from dust, dirt, grease, and all foreign materials.

    1. Check panels for sources of discoloration such as contamination from paint, varnish, stain overspray or spills, plumbing sealers, asphalt, heater fuel, markers or potential staining agents such as wood or bark not visible on the surface, edge sealers, logo markings, printed nail patterns and synthetic patches.

    2. Remove old adhesive.

3. Cover adhesive, oil or wax residue with an appropriate underlayment. If the residue is tacky, place a layer of felt or polyethylene sheeting over it to prevent a cracking sound when walking on the floor.
4. Remove all paint, varnish, oil and wax from all subfloors. Many buildings constructed before 1978 contain lead-based paint, which can pose a health hazard if not handled properly. State and federal regulations govern activities that disturb lead-based painted surfaces and may also require notice to building occupants. **Do not remove or sand lead-based paint without consulting a qualified lead professional for guidance on lead-based paint testing and safety precautions.** Armstrong Flooring does not recommend the use of solvents to remove paint, varnish, oil, wax or old adhesive residues because the solvents can remain in the subfloor and negatively affect the new installation. Whenever sanding, be certain the work site is well ventilated and avoid breathing dust. If high dust levels are anticipated, use appropriate National Institute for Occupational Safety and Health (NIOSH) designated dust respirator. All power sanding tools must be equipped with dust collectors. Avoid contact with skin or eyes. Wear gloves, eye protection and long-sleeve, loose fitting clothes
5. For additional information on the installation and preparation of wood and board-type underlayments see the current edition of ASTM F1482, "Standard Practice for Installation and Preparation of Panel Type Underlayments to Receive Resilient Flooring."
6. Vacuum or broom-clean surfaces to be covered immediately before the application of flooring.

3.04 INSTALLATION OF FLOORING

A. Install flooring in strict accordance with the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061. Failure to comply may result in voiding the manufacturer's warranty listed in Section 1.08.

B. Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

C. If required, install flooring on pan-type floor access covers. Maintain continuity of color and pattern within pieces of flooring installed on these covers. Adhere flooring to the subfloor around covers and to covers.

D. Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.

E. Roll with a 100-pound (45.36 kilogram) roller in the field areas. Refer to specific rolling instructions of the flooring manufacturer

F. Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

3.05 INSTALLATION OF ACCESSORIES

A. Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.

B. Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

C. Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

D. Apply butt-type metal edge strips where shown on the drawings, before flooring installation. Secure units to the substrate, complying with the edge strip manufacturer's recommendations.

3.06 CLEANING

A. Perform initial and on-going maintenance according to the latest edition of Armstrong Flooring Maintenance Recommendations and Procedures manual, F-8663.

3.07 PROTECTION

A. Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings. (See Finishing The Job in the latest edition of Armstrong Flooring Guaranteed Installation Systems manual, F-5061.)

END OF SECTION