SECTION 09 65 16 – VINYL SHEET FLOORING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Vinyl Sheet Flooring – See Finish Legend and Finish Schedule in Contract Documents for additional information.

B. Accessories as required for complete installation with Altro Tegulis Wall Panels or approved equal.

C. Moisture barrier membrane per vinyl sheet flooring manufacturer recommendations.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections apply to this Section.

B. Summary
Section Includes: This section includes labor, materials and other services necessary to complete resilient safety sheet vinyl and sheet vinyl flooring systems and accessories work. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section, including but not limited to the following:
1. Coordination of start date and timeframe.
2. Coordination of substrate preparation.
3. Coordination of moisture and pH testing.
4. Coordination with moisture mitigation if required based on moisture testing results.
5. Coordination of proper plumbing fixtures for connections with flooring.
6. Floor installation and heat welding of all seams, horizontal and vertical.

C. Related Sections:
1. Section 01 73 29 Cutting and Patching
2. Section 02 41 00 – Demolition
3. Section 09 72 00 – Wall Covering
4. Section 22 40 00 – Plumbing Fixtures
5. Section 23 80 00 – Decentralized HVAC Equipment Plumbing

1.2. REFERENCES

A. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
B. ASTM F710, Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
C. ASTM F970, Standard Test Method for Static Load Limit.
D. ASTM F1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.
E. ASTM F1303, Standard Specification for Sheet Vinyl Floor Covering with Backing.
F. ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete

Floor Slabs Using in situ Probes.

G. ASTM F 3010 Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings
H. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
I. RFCI Recommended Work Practices for Removal of Resilient Floor Covering
J. ACI 302.2R-06 Guide for Concrete Slabs that Receive Moisture-Sensitive Flooring Materials
K. RFCI Moisture Mitigation Technical Paper: Installation Considerations for Resilient Floor Covering including the Decision Tree Process.
L. ANSI/ICPA SS-1 2001, Performance standard for Solid Surface Materials
M. 2018, International Plumbing Code (IPC) with Appendix A

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, including the Altro Wet Area Detailing Guide, along with field reports in accordance with Section 013300 - Submittal Procedures. Clamping Trench Drain is required.

B. Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Submittal Procedures including but not limited to the following:
   1. Submit a seaming cut diagram indicating seam locations and roll direction. Use mitered seam layouts for corners when changing directions 180 degrees (e.g. when running material down corridors which bisect at a right angle), unless approved otherwise.
   2. Floor Plans including notations at each drainage protrusion drains and similar items as to the method of connection.
   3. Wall caps and vertical/horizontal transition to adjacent materials.

C. Samples: Submit single sample of 8" x 10" (203.2 mm x 254 mm) pieces of sheet material, 6" (152 mm) long gulley edge, cap strip, vertical transition strip, cove former, and heat weld as applicable to complete installation of flooring system in bathrooms.

D. Closeout Submittals – submit the following:
   1. Operation and Maintenance Data: Submit manufacturer's operation and maintenance data for incorporation into owner's manual. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project. See
   1. Training: Installer who has attended an Altro flooring installation training clinic or who has successfully installed Altro in three wet area installations.
   2. Awarded flooring contractor must use in-house installers.
   3. Awarded flooring contractor must be able to provide recent Altro references with contacts.
   4. Local Area installers meeting requirements:

      a. Certified Flooring Installer or approved equal:
         BW Hovermill

Gary Heath or Luke Patton
T: 410-631-2880
Email: gheath@bwhovermill.com
Email: tpatton@bwhovermill.com

b. Certified Flooring Installer required.

B. Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing in one residential unit that will become the final installation after review and approval of Owner and/or Architect.
   1. Incorporation: Mock-up will be incorporated into final construction upon Architect & Owner approval.

C. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, manufacturer's warranty requirements, and installer qualifications.

D. Bond Test: Install multiple bond tests using 3' x 3' pieces of material adhered with the appropriate adhesive to verify quality of adhesion. Remove half of each piece after 24 hours, then the other half after 48 hours. To help assess resistance to indentation, place end user equipment onto a sample for 72 hours. Document all results.

E. Regulatory Requirements: Provide safety flooring in compliance with the following:
   1. Americans with Disabilities Act Architectural Guidelines (ADAAG)
   2. Occupational Safety and Health Administration (OSHA)

1.5 SITE CONDITIONS

A. Temperature Requirements: If storage temperature is below 68F or the floor temperature is below 65F, the vinyl sheet flooring must be moved to a warmer place and allowed to reach this temperature before unrolling or installing. For further information, refer to current Altro Installation Practices and Quick Facts.

B. Maintain air temperature and structural base temperature at flooring installation area between 68F and 80F for 72 hours before, during and 24 hours after installation.

C. Maintain the ambient relative humidity between 40 percent and 60 percent during installation.

D. Allow sufficient time for proper preparation, installation and curing.

E. Close spaces to traffic during resilient flooring installation until the installer is satisfied that the adhesive has set.

F. Verify permanent HVAC is operational. If temporary heat is required, use electric or indirect heat sources. **Do not use kerosene or propane in direct contact with the ambient air.**

G. Verify other finishing operations, including painting, have been completed prior to installation of resilient flooring.

H. Where demountable partitions and other items are indicated for installation on top of sheet resilient flooring material, install flooring material before these items are to be

installed.

I. Coordinate with plumbing subcontractor that approved surface membrane clamping drainage connections will be used, including but not limited to, surface clamping round drains, surface clamping trench drains, surface clamping floor sinks, surface clamping grease traps, or use of Altro Gulley Edge/Angle, or employment of Altro's Modified Surface Clamping Drain System if existing drains cannot be removed.

J. Conform to all pertinent ASTM, ACI and Altro Standards listed in, but not limited to, this specification.

1.6 DELIVERY, STORAGE AND HANDLING

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

B. Deliver, store and handle resilient flooring materials in accordance with Section 01610 - Basic Material Requirements.

C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions as recommended by manufacturer.

E. Store rolls in dry locations. Stand rolls on end. Protect and secure rolls from falling.

1.7 WASTE MANAGEMENT AND DISPOSAL

A. Deposit all packaging materials in appropriate container on site for recycling or reuse.

B. Avoid using landfill waste disposal procedures when recycling facilities are available.

C. Keep all discarded packaging away from children.

1.8 WARRANTY

A. Warranty period for Altro Aquarius shall be 10 years commencing on date of substantial completion.

B. A Labor Warranty period of 2 years to be supplied by Sub-Contractor.

PART 2 PRODUCTS

2.1 SAFETY FLOORING AND SHEET VINYL FLOORING

Specifier Note: All Altro Safety flooring meets requirements of ASTM F1303-2, Type 2, Grade 1, Class A moisture resistant backing.

A. Products

1. SV#1: Altro Wood or Approved Equal – Color: See Finish Legend, Finish Schedule, and

Drawing
2. SV#2: Altro Aquarius or Approved Equal – Safety Sheet Flooring – Color: See Finish Legend, Finish Schedule and Drawings or approved equal
3. Altro or approved equal
    i. USA: Altro USA, Incorporated. 80 Industrial Way, Wilmington MA 01887
    Toll Free: 800.377.5597 Tel: 978.657.6464 Fax: 610.746.4325
    Email: Request info: support@altrofloors.com
    Web: www.altrofloors.com

2.2 ACCESSORIES

Accessories include but are not limited to the following:

A. Manufacturer: Altro or Approved Equal
    1. Vinyl welding rod: Altro Weld Rod
    2. Pencil Cove former: Altro Cove former
    3. Gulley edge: Altro Gulley Edge per manufacturer recommendations and as required for completed installation of system.
    4. Vinyl Cap strip: Altro Cap Strip per manufacturer recommendations and as required for completed installation of system.
    5. Stainless Steel Cap strip: stainless steel with lip to extend over flooring per manufacturer recommendations and as required for completed installation of system.
    6. Subfloor Filler and Leveler: Use only gray Portland cement-based “moisture tolerant” underlayments, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable.

B. Adhesives:
    1. Leveling and Patching Compounds: Latex-modified, moisture resistant, silicate free, Portland cement based or blended hydraulic-cement-based formulation.
    2. Adhesives per manufacturer recommendations and as required for completed installation of system.
        a. Altrofix 30- 2-part polyurethane per manufacturer recommendations and as required for completed installation of system.
        b. Altrofix Zero – 1 part hybrid urethane adhesive per manufacturer recommendations and as required for completed installation of system.
        c. MP600 – caulking adhesive for use with Altro Gulley Edge

C. Caulking:
    1. AltroMastic 100 caulking compound (color match flooring) for use where Altro floors abuts edges, skirtings, wall surfaces or where the flooring is cut around pipes and door frames.

PART 3 EXECUTION

3.1 EXAMINATION

A. Compliance: Comply with manufacturer’s product data, including product technical bulletins and product catalog for the specified Altro Flooring. Installation instructions found at www.altrofloors.com.

B. 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.

3.2 PREPARATION

A. Remove substrate paint, coatings and other substances that are incompatible with adhesives or contain soap, wax, oil, solvents, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

B. Verify permanent HVAC is operational. If temporary heat is required, use electric or indirect heat sources. **Do not use kerosene or propane in direct contact with the ambient air.**

C. Verify other finishing operations, including painting, have been completed

D. Permanent and non-permanent markers, pens, crayons, and paint shall not be used to write on the back of the flooring material or used to mark the substrate as they could bleed through and stain the flooring material.

E. Altro Safety flooring shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.

F. Always conduct moisture tests per ASTM F-2170 on all concrete slabs regardless of age or grade level. ASTM F-2170 Internal Relative Humidity (IRH) test results must not exceed 90%. Alkalinity Testing per ASTM F710 with an acceptable range of 7-9.9 pH.

G. Do not proceed with work until results of moisture condition tests are acceptable.

H. When patching, a ***moisture tolerant*** patching compound must always be used.

I. Contingency for High Moisture Readings in Concrete:
   1. If at the time of installation the moisture readings are in excess of Altro's recommendations, the General Contractor shall employ a means of Moisture Mitigation. This includes, but is not limited to, the following methods:
      a. Application of a Moisture Reduction Barrier (MRB)
      b. Temporary use of dehumidification equipment.
      c. Postponing of the flooring installation start time.
      d. A budget should be provided to the general contractor for use of an MRB

3.3 INSTALLATION

A. Installation: Install Altro Aquarius flooring in accordance with the current posted Altro Installation Practices at www.altrofloors.com, Technical, Installation Guides. All seams shall be heat-welded with Altro Weldrod™ only. Failure to install Altro Safety flooring in accordance with recommended procedures will void the Altro Limited Product Warranty.

B. Wet Area Detailing Guide: can be found on our website at www.altrofloors.com, Technical, Installation Guides. The installation of Altro Aquarius is a system installation. All circular drain covers must be modified in the field or specified by the architect to be Surface-Membrane

Clamping Style Drains and installed per the instructions in the Altro Flooring installation guide. The Gulley Edge/Angle, AltroMastic 100, Cove Former, and Cap Strip Accessories are necessary accessories for a water-tight and manufacturer-compliant installation. See Drawings for more information.

C. Drains: Fit Altro Safety flooring and mechanically fasten ("clamping drain") to drain outlets to ensure a permanent, watertight installation.
   1. **New Round Drains inside Trench Drain Detail**: Install round flash clamping ring type drains to accommodate Altro safety flooring. Install drains to fit flush with surrounding floor surface. **Please refer to Altro's current Installation Guide for approved drain styles**, www.altrofloors.com, Technical, Installation Guides. If the drain body specified has weep holes that they be sealed so as not to allow moisture from inside the drain itself to leak back up and out of the weep holes. **Surface-Clamping Style Drains are required.**

D. Coved Installation and Standard Base Installation: Altro flooring should be coved up wall surfaces and other abutments, installation shall be in accordance with Altro Installation Practices using the following accessories:
   1. At Altro Tegulis wall covering panels: Use Vinyl Cap Altro C8 or C4, or Altro Stainless Steel Cap – for shower areas, wet walls, and wainscot areas in bathrooms as indicated in Finish Legend and Schedule.
   2. When coving up the wall; at juncture of vertical and horizontal surfaces: Use Altro Vinyl Pencil Cove Former and install with contact tape – for cove base to be installed behind Altro Tegulis wall covering panels.
   3. Top set cove base: Install in accordance with manufacturer's instructions for Pencil Cove detail for Altro Tegulis wall covering panels and Aquarius flooring.
   4. Standard wall base to be installed at Altro Wood product – See Finish Schedule and Legend for additional information.
   5. Altro Wood product to be heat welded to Altro Aquarius product – See Finish Schedule and Legend for additional information.

3.4 CLEANING

Specifier Note: Altro Safety flooring is unaffected by surface water and most chemicals which do not have a solvent action on vinyl. Certain organic solvents and chemicals, including asphalt, can cause staining, as might some antioxidants found in certain types of rubber used in mats, wheels and tires. Acids and dyes may affect the color, which should be selected accordingly. Contact Altro about the effects of chemicals on Altro flooring.

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Never use tapes on the surface on the finish flooring. Never use Sharpies, pens, crayons or construction markers on either the finish flooring or the substrate.

B. Repair or replace damaged installed products.

C. Clean installed products in accordance with manufacturer's instructions prior to Punchlist Completion with Owner's acceptance.

D. Current recommended maintenance procedures can be found on the Altro website at

www.altrofloors.com, Technical Documents, Maintenance Guides.

E. Sweep or vacuum all construction debris and dust first, then clean the flooring with AltroClean 44 / AltroClean 44 Plus using an auto scrubber.

F. Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as reusable textured plastic sheeting.

G. No traffic for 24 hours after installation, unless approved by Altro technical.

H. No heavy traffic, rolling loads, or furniture placement for 72 hours after installation.

I. Wait 72 hours after installation before performing initial cleaning. Start a regular maintenance program after the initial cleaning as recommended by manufacturer.

3.5 PROTECTION

A. **Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system, such as a reusable textured plastic sheeting or equivalent without taping to the surface of the installed flooring.**

END OF SECTION