SECTION 096500
RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient sheet flooring.

B. Resilient vinyl plank flooring.

C. Installation accessories.

1.02 RELATED REQUIREMENTS

A. Section 035400 - Self-Leveling Underlayment.

1.03 REFERENCE STANDARDS

A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2023.

B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2022.

C. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading; 2022.

D. ASTM F1303 - Standard Specification for Sheet Vinyl Floor Covering with Backing; 2004 (Reapproved 2021).

E. ASTM F1344 - Standard Specification for Rubber Floor Tile; 2021a.

F. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2019.

G. FS RR-T-650 - Treads, Metallic and Nonmetallic, Skid Resistant; Federal Specifications and Standards; Revision E, 1994.

H. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2023.

1.04 SUBMITTALS

A. See Section 013000 - Administrative Requirements for submittal procedures.

B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.

C. Shop Drawings: Indicate seaming plans.

D. Verification Samples: Submit two samples, 12 by 12 inch in size illustrating color and pattern for each resilient flooring product specified.

E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.

F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
   1. See Section 016000 - Product Requirements, for additional provisions.
   2. Extra Flooring Material: 50 square feet of each type and color.
   3. Extra Wall Base: 20 linear feet of each type and color.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Maintain temperature in storage area between 55 degrees F and 90 degrees F.

B. Protect roll materials from damage by storing on end.

1.06 FIELD CONDITIONS

A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

PART 2 PRODUCTS

2.01 SHEET FLOORING

A. Vinyl Sheet Flooring: Homogeneous without backing, with color and pattern throughout full thickness.
   1. Manufacturers:
      a. As indicated on Finish Drawings.
   2. Minimum Requirements: Comply with ASTM F1913.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or ASTM E 648.
   4. Thickness: 0.080 inch nominal.
   5. Sheet Width: 72 inch minimum.
   6. Static Load Resistance: 250 psi minimum, when tested as specified in ASTM F970.
   7. Seams: Heat welded. Color as indicated on drawings.
   8. Integral coved base with cap strip.
   9. Pattern: As indicated on Finish Drawings.

B. Vinyl Plank Flooring : Homogeneous without backing, with color and pattern throughout full thickness.
   1. Manufacturers:
      a. As indicated on Finish Drawings.
   2. Minimum Requirements: Comply with ASTM F1303, Type I, with Class A fibrous backing.
   3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or ASTM E 648.
   4. Wear Layer Thickness: 0.020 inch minimum.
   5. Total Thickness: 0.120 inch minimum.
   6. Sheet Width: 108 inch minimum.
   7. Pattern: As indicated on Finish Drawings.

C. Vinyl Welding Rod: Solid vinyl bead produced by flooring manufacturer for heat welding seams, and in color matching field color. See Finish Drawings for color selection.

2.02 ACCESSORIES

A. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
   1. Use epoxy adhesive under areas to receive Vinyl Wood Flooring.

B. Filler for Coved Base: Plastic.

C. Sealer and Wax: Types recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.

B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.

C. Cementitious Sub-floor Surfaces: Verify that substrates are dry enough and ready for resilient flooring installation by testing for moisture and pH.
   1. Test in accordance with ASTM F710.
   2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.

D. Verify that required floor-mounted utilities are in correct location.

3.02 PREPARATION

A. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

B. Representatives of the flooring contractor and general contractor agree to meet 30 days before start of the floor covering to review and agree in respect that the conditions set forth by the floor covering manufacturers have been meet.

C. Remove sub-floor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with cement based sub-floor filler to achieve smooth, flat, hard surface as recommended by the flooring manufacturer. Avoid organic solvents.

D. Prohibit traffic until filler is fully cured.

E. Clean substrate.Remove coatings from sub-floor surfaces that would prevent adhesive bond, including curing compounds incompatible with resilient flooring adhesives, paints, oils, waxes and sealers. Broom clean and vacuum surfaces to be covered, and inspect sub- floor.

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

3.03 INSTALLATION - GENERAL

A. Starting installation constitutes acceptance of sub-floor conditions.

B. Install in accordance with manufacturer's written instructions.

C. Spread only enough adhesive to permit installation of materials before initial set.

D. Fit joints and butt seams tightly.

E. Set flooring in place, press with heavy roller to attain full adhesion.

F. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.

G. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.

H. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

3.04 INSTALLATION - SHEET FLOORING

A. Lay flooring with joints and seams in accordance with seaming plan. Lay out seams to avoid widths less than 1/3 of roll width. Avoid cross seams, filler pieces and strips. Match edges for color shading and pattern at the seams in compliance with manufacturer's recommendations.

B. Seal seams by heat welding where indicated.

C. Where floor finishes are different on opposite sides of door, terminate flooring under centerline of door.

D. Verify that concrete sub-floor surfaces are ready for resilient flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following 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.

E. Coved Base: Install as detailed on drawings, using coved base filler, with a radius of 1" as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip. Provide strips made of extruded aluminum with a mill finish, unless otherwise shown.

F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.

G. Install flooring in recessed floor access covers. Maintain floor pattern.

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

3.05 INSTALLATION - VINYL WOOD FLOORING

A. Install in accordance with manufacturer's instructions

B. Use epoxy adhesive under areas to receive Vinyl Wood Flooring.

C. Verify that concrete sub-floor surfaces are ready for resilient plank tile installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within the following 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

D. After addressing the issue of moisture testing, the floor can be prepared for the installation of a new plank floor. Remove any sealers, curing compounds, dirt grease, paint, or old adhesives which have been applied to the surface of the concrete. These can hinder the adhesive bond. Do not install new flooring over concrete sealers or curing compounds. Remove such foreign matter by mechanical means such as bead blasting, scarifying, or sanding. The use of solvents or chemical adhesive removers is not recommended

E. Plank manufacturer recommends specific cementitious underlayment products. For exact recommendations and instructions, the underlayment manufacturer must be consulted. If plank flooring manufacturer recommended products are not used, products used shall be cementitious, and shall develop a minimum compressive strength of 3500 psi per ASTM C-109. Gypsum Based products or products which do not meet this psi criteria are not acceptable. Also, do not install cementitious products over gypsum products.

F. Minor repairs using trowelable latex patching compounds.
   1. It is often necessary to patch or "skim coat" an exiting floor to make the surface acceptable for the installation of flooring products, using an acceptable cementitious latex patching compound.
   2. Gypsum based floor patches are not acceptable.
      a. Follow manufacturers instructions for proper application. Apply a sufficient amount of patching compound to cover all depressions, joints, etc. Apply successive coats, if necessary, once the previous coat has dried according to manufacturers guidelines. Sand and/or scrape all uneven spots or any trowel ridges smooth, and vacuum. Once the patching compound is thoroughly dry and the smoothness of the floor is acceptable, proceed with the installation of the new plank flooring system.
      b. Adhere over entire surface. Fit accurately and securely.

3.06 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.

B. Clean, seal, and wax (2 coats) in accordance with manufacturer's instructions.

3.07 PROTECTION

A. Prohibit traffic on resilient flooring for 48 hours after installation.

B. Protect flooring against mars, marks, indentations, rolling loads, and other damage from construction operators and placement of equipment and fixtures during remainder of construction period. Use protection methods indicated or recommended by manufacture of resilient product involved.

C. Clean and remove all excess wax off base.

END OF SECTION