SECTION 09650 - RESILIENT FLOORING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Rubber floor tile.
   2. Vinyl composition floor tile.
   3. Sheet vinyl floor coverings with fibrous backing.
   4. Resilient wall base and accessories.
   5. Resilient Stair Accessories.

B. Related Sections include the following:
   1. Division 1 Section “Alternates” for information on alternate pertaining to this section.

1.2 PERFORMANCE REQUIREMENTS

A. Static Coefficient of Friction: For flooring installed on walkway surfaces, provide products with the values indicated as determined by testing identical products per ASTM C 1028.

1.3 SUBMITTALS

A. Product Data: For each type of product specified.

B. Shop Drawings: Show location of seams and edges of sheet vinyl flooring. Indicate location of columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutout locations.

C. Samples for Selection: Manufacturer's color charts consisting of units or sections of units showing the full range of colors and patterns available for each type of product indicated.
   1. For resilient accessories, manufacturer's standard-size samples, but not less than 12 inches long, of each resilient accessory color and pattern specified.

D. Product Certificates: Signed by manufacturers of resilient products certifying that each product furnished complies with requirements.

E. Maintenance Data: For resilient flooring to include in the maintenance manuals specified in Division 1.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced installer to perform work of this Section who has specialized in installing resilient products similar to those required for this Project and with a record of successful in-service performance.
   1. Engage an installer who is competent in the technique required by manufacturer for heat-welding seams.

B. Source Limitations: Obtain each type, color, and pattern of product specified from one source with resources to provide products of consistent quality in appearance and physical properties without delaying the Work.

C. Fire-Test-Response Characteristics: Provide products with the following fire-test-response characteristics as determined by testing identical products per test method indicated below by a testing and inspecting agency acceptable to authorities having jurisdiction.
   1. Critical Radiant Flux: 0.45 W/sq. cm or greater when tested per ASTM E 648.
   2. Smoke Density: Maximum specific optical density of 450 or less when tested per ASTM E 662.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to Project site in manufacturer's original, unopened cartons and containers, each bearing names of product and manufacturer, Project identification, and shipping and handling instructions.

B. Store products in dry spaces protected from the weather, with ambient temperatures maintained between 50 and 90 deg F.

C. Store tiles on flat surfaces. Do not stack boxes of tiles over 5 high.

D. Store rolls upright.

E. Move products into spaces where they will be installed at least 48 hours before installation, unless longer conditioning period is recommended in writing by manufacturer.

1.6 PROJECT CONDITIONS

A. Maintain a temperature of not less than 70 deg F or more than 95 deg F in spaces to receive products for at least 48 hours before installation, during installation, and for at least 48 hours after installation, unless manufacturer's written recommendations specify longer time periods. After postinstallation period, maintain a temperature of not less than 55 deg F or more than 95 deg F.

B. Do not install products until they are at the same temperature as the space where they are to be installed.

C. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.

D. Install products and accessories after other finishing operations, including painting, have been completed.

E. Where demountable partitions and other items are indicated for installation on top of resilient tile flooring, install tile before these items are installed.

F. Do not install flooring over concrete slabs until slabs have cured and are sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test as well as acceptable pH range.

1.7 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels describing contents.
   1. Furnish not less than one box of each type, color, pattern, class, wearing surface, and size of resilient tile flooring installed.
   2. Furnish not less than 10 linear feet in roll form of each different composition, wearing surface, color, and pattern of sheet vinyl floor covering installed.
   3. Furnish not less than 10 linear feet for each type, color, pattern, and size of resilient accessory installed.

4. Deliver extra materials to Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, those indicated in the following paragraphs of Part 2.

2.2 RESILIENT TILE

A. Vinyl Composition Tile: Where this designation is indicated, provide vinyl composition floor tile complying with ASTM F 1066 and the following:
1. Products: As follows:
   a. Armstrong World Industries: Imperial Texture Standard Excelon and Multi-Color.
2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns. Architect to select up to twenty-five colors.
3. Class: Class 2 (through-pattern tile).
4. Static Coefficient of Friction: Level Surfaces, minimum 0.6.
5. Thickness: 1/8 inch.
6. Size: 12 by 12 inches.

2.3 SHEET VINYL FLOOR COVERINGS

A. Sheet Vinyl: Where this designation is indicated, provide sheet vinyl floor covering with backing complying with ASTM F 1303 and the following:
1. Available Products: As follows:
   a. Armstrong: Possibilities.
2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for sheet vinyl floor covering complying with requirements indicated. Architect to select up to eight colors.
3. Type (Binder Content): Type I, minimum binder content of 90 percent.
4. Wear-Layer Thickness: Minimum Grade 1 thickness according to ASTM F 1303 for Type indicated.
5. Static Coefficient of Friction: Ramp Surfaces: Minimum 0.8.
6. Overall Thickness: 0.080 inch (2.0 mm).
7. Wearing Surface: Embossed with embedded abrasives.
8. Backing Class: Class A (fibrous).
9. Sheet Width: 6.5 feet.
10. Seaming Method: Chemically bonded.

2.4 RESILIENT ACCESSORIES

A. Rubber Base: Where this designation is indicated, provide rubber wall base complying with FS SS-W-40, Type I and the following:
1. Products: As follows:
   a. Johnsonite.
2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for rubber wall base complying with requirements indicated. Architect to select up to ten colors.

3. Style: Cove with top-set toe.
4. Minimum Thickness: 1/8 inch.
5. Height: 4 inches.
6. Lengths: 120 feet (36.6 m) long.
7. Outside Corners: Job formed.
8. Inside Corners: Job formed.
9. Surface: Smooth.

B. Rubber Stair Treads and Accessories: Where this designation is indicated, provide rubber stair treads and accessories complying with FS RR-T-650, Composition A and the following:
1. Available Products: As follows:
   a. Endura
2. Color and Pattern: As selected by Architect from manufacturer's full range of colors and patterns produced for rubber stair treads and accessories complying with requirements indicated. Architect to select up to 5 colors.
3. Static Coefficient of Friction: Step Treads: Minimum 0.8.
4. Rubber Stair Treads: Type 2 design (designed) products complying with the following requirements:
   a. Type: Low Profile Raised-disc pattern.
   b. Abrasive Strips: Provide abrasive strips as specified by product designation indicated above in color selected by Architect from manufacturer's full range of colors.
   c. Nosing Style: Square, adjustable to cover angles between 60 and 90 degrees.
   d. Nosing Height: As follows, measured from top of tread to bottom edge of nosing:
      1) 1-1/2 inches.
   e. Thickness: 3/16-inch tapering to 1/8 inch at back edge.
   f. Size: Lengths and depths to fit each stair tread in one piece or, for treads exceeding maximum lengths manufactured, in equal-length units.
5. Rubber Risers: Smooth, flat, risers, 1/8 inch thick integral with tread unit.
6. Warranty: Stair treads to be warranted against excessive wear when properly installed under normal usage in recommended application for a period of ten (10) years, when using the epoxy nosing filler.

C. Rubber Accessory Molding: Where this designation is indicated, provide rubber accessory molding complying with the following:
1. Available Products: As follows:
   a. Johnsonite.
2. Color: As selected by Architect from manufacturer's full range of colors produced for vinyl accessory molding complying with requirements indicated.
3. Carpet to Resilient No. CTA-XX-D
4. Resilient to Concrete No. RRS-XX-C
5. Carpet to Concrete No. EG-XX-G

2.5 INSTALLATION ACCESSORIES

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by flooring manufacturer for applications indicated.

B. Stair-Tread-Nose Filler: Two-part epoxy compound recommended by resilient tread manufacturer to fill nosing substrates that do not conform to tread contours.

C. Adhesives: Water-resistant type recommended by manufacturer to suit resilient products and substrate conditions indicated.

D. Epoxy Adhesives: Two-part epoxy compound recommended by resilient tread manufacturer to adhere rubber treads and risers to substrates.

E. Chemical Bonding Compound: Product of floor covering manufacturer for chemically bonding seams.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions where installation of resilient products will occur, with Installer present, for compliance with requirements for maximum moisture content, alkalinity range, installation tolerances, and other manufacturer's requirements. Verify that substrates and conditions are satisfactory for resilient product installation and comply with requirements specified.

B. Concrete Subfloors: Verify that concrete slabs comply with ASTM F 710 and the following:
   1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials that may interfere with adhesive bond.
   2. Verify that adhesion and dryness characteristics have been determined as required in Division 7 Section “Vapor Retarders, Vapor Barriers, and Air Barriers” and meet flooring manufacturer’s recommendations.
   3. Subfloor finishes comply with requirements specified in Division 3 Section "Cast-in-Place Concrete" for slabs receiving resilient flooring.
   4. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits.

C. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. General: Comply with resilient product manufacturer's written installation instructions for preparing substrates indicated to receive resilient products.

B. Use trowelable leveling and patching compounds, according to manufacturer's written instructions, to fill cracks, holes, and depressions in substrates.

C. Use stair-tread-nose filler, according to resilient tread manufacturer's written instructions, to fill nosing substrates that do not conform to tread contours.

D. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.

E. Broom and vacuum clean substrates to be covered immediately before product installation. After cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.3 TILE INSTALLATION

A. General: Comply with tile manufacturer's written installation instructions.

B. Lay out tiles from center marks established with principal walls, discounting minor offsets, so tiles at opposite edges of room are of equal width. Adjust as necessary to avoid using cut widths that equal less than one-half of a tile at perimeter.
   1. Lay tiles in pattern as indicated on Drawings.

C. Match tiles for color and pattern by selecting tiles from cartons in the same sequence as manufactured and packaged, if so numbered. Cut tiles neatly around all fixtures. Discard broken, cracked, chipped, or deformed tiles.
   1. Lay tiles in basket-weave pattern with grain direction alternating in adjacent tiles.
   2. Lay tiles in pattern of colors and sizes indicated on Drawings.

D. Scribe, cut, and fit tiles to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

E. Extend tiles into toe spaces, door reveals, closets, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other nonpermanent, nonstaining marking device.

G. Install tiles on covers for telephone and electrical ducts, and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers. Tightly adhere edges to perimeter of floor around covers and to covers.

H. Adhere tiles to flooring substrates using a full spread of adhesive applied to substrate to comply with tile manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
   1. Provide completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

I. Hand roll tiles according to tile manufacturer's written instructions.

3.4 SHEET VINYL FLOOR INSTALLATION

A. General: Comply with sheet vinyl floor covering manufacturer's written installation instructions.

B. Unroll sheet vinyl floor coverings and allow them to stabilize before cutting and fitting, if recommended in writing by manufacturer.

C. Lay out sheet vinyl floor coverings to comply with the following requirements:
   1. Maintain uniformity of sheet vinyl floor covering direction.
   2. Arrange for a minimum number of seams and place them in inconspicuous and low-traffic areas, and not less than 6 inches away from parallel joints in flooring substrates.
   3. Match edges of sheet vinyl floor coverings for color shading and pattern at seams according to manufacturer's written recommendations.
   4. Avoid cross seams.

D. Scribe, cut, and fit sheet vinyl floor coverings to butt neatly and tightly to vertical surfaces and permanent fixtures, including built-in furniture, cabinets, pipes, outlets, edgings, door frames, thresholds, and nosings.

E. Extend sheet vinyl floor coverings into toe spaces, door reveals, closets, and similar openings.

F. Maintain reference markers, holes, and openings that are in place or marked for future cutting by repeating on finish flooring as marked on subfloor. Use chalk or other nonpermanent, nonstaining marking device.

G. Install sheet vinyl floor coverings on covers for telephone and electrical ducts, and similar items in finished floor areas. Maintain overall continuity of color and pattern with pieces of flooring installed on covers. Tightly adhere edges to perimeter of floor around covers and to covers.

H. Adhere sheet vinyl floor coverings to flooring substrates to comply with floor covering manufacturer's written instructions, including those for trowel notching, adhesive mixing, and adhesive open and working times.
   1. Produce completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

I. Chemically Bonded Seams: Chemically bond seams with bonding compound, permanently fusing sections into a seamless floor covering. Prepare seams and apply compound according to manufacturer's written instructions and ASTM F 693 to produce tightly fitted seams without gaps, overlays, or excess bonding compound on floor covering surfaces.

J. Hand roll sheet vinyl floor coverings in both directions from center out to embed floor coverings in adhesive and eliminate trapped air. At walls, door casings, and other locations where access by roller is impractical, press floor coverings firmly in place with flat-bladed instrument.

3.5 RESILIENT ACCESSORY INSTALLATION

A. General: Install resilient accessories according to manufacturer's written installation instructions.

B. Apply resilient wall base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.
   1. Install wall base in lengths as long as practicable without gaps at seams and with tops of adjacent pieces aligned.
   2. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.
   3. Do not stretch base during installation.
   4. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material.
   5. Install premolded outside and inside corners before installing straight pieces.

C. Place resilient accessories so they are butted to adjacent materials and bond to substrates with adhesive. Install reducer strips at edges of flooring that would otherwise be exposed.
   1. Locate reducer strips or transition strips to line up under doors, unless noted otherwise.

D. Apply resilient products to stairs as indicated and according to manufacturer's written installation instructions.

3.6 CLEANING AND PROTECTING

A. Perform the following operations immediately after installing resilient products:
   1. Remove adhesive and other surface blemishes using cleaner recommended by resilient product manufacturers.
   2. Sweep or vacuum floor thoroughly.
   3. Do not wash floor until after time period recommended by flooring manufacturer.
   4. Damp-mop floor to remove marks and soil.

B. Clean floor surfaces as soon as possible after installation. Clean products according to manufacturer's written recommendations.

1. After cleaning, apply polish to floor surfaces to provide protective floor finish according to flooring manufacturer's written recommendations. Coordinate with Owner's maintenance program.

END OF SECTION 09650