SECTION 09 65 00

RESILIENT FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Resilient solid vinyl sheet flooring.

B. Resilient tile flooring (Vinyl composition for vinyl).

C. Resilient base (at resilient flooring and at carpet).

D. Reducer strips.

E. Transition strips.

F. Interior detectable warning surfaces.

G. Installation accessories noted herein.

1.02 RELATED REQUIREMENTS

A. Section 03 54 00 - Cast Underlayment.

1.03 SUSTAINABILITY REQUIREMENTS

A. Sustainability requirements included in the Section are as follows:

1. Meet established minimum pre-consumer percent content for vinyl composition tile and sheet vinyl products and documentation of Recycled materials.

B. The Contractor shall implement practices and procedures to meet the Project's sustainable requirements. The Contractor shall ensure that the requirements related to these goals, as defined in Specification Section S01352, Sustainability Requirements, and as specified in this Section, are implemented to the fullest extent. Substitutions, or other changes to the work proposed by the Contractor or their sub-contractors, shall not be allowed if such changes compromise the stated Sustainable Design Performance Criteria. Where no additional paragraphs are listed below, refer to Specification Section S01352, Sustainability Requirements.

1.04 REFERENCE STANDARDS

A. ASTM D2047 - Standard Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine; 2011.

B. ASTM E662 - Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials; 2013b.

C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

D. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source; 2014c.

E. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride; 2011.

F. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring; 2011.

G. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile; 2004 (Reapproved 2014).

H. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing; 2004 (Reapproved 2014).

I. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; 2015.

J. Federal Specifications P-F-430C

K. Where the language in any of the documents referred to herein is in the form of a recommendation or suggestion, such recommendations or suggestions shall be deemed mandatory under this contract.

1.05 SUBMITTALS

A. Product Data
   1. Manufacturers' specifications, installation instruc-tions, surface preparation requirements and maintenance manuals for each material specified.

B. Samples
   1. For Initial Selection: Submit actual sections of resilient flooring materials, showing full range of colors and patterns available, for each type of resilient flooring required
   2. For Verification, prior to installation, submit the following:
      a. Resilient tile: Full size, each type, size and color specified:
         1) Light Reflectivity (L.R.): Sample tiles submitted must have light reflective values of each tile noted either by Light Reflectivity (L.R.) Sample tiles submitted must have light reflective values of each tile noted either by Stamping L.R. value on back or Stamping L.R. value on back or Printed schedule form (submit in triplicate).
      b. Vinyl Sheet: 12 square section.
      c. Resilient Base: 12” long sections, each type and color specified.
      d. Feature Strip: 12” long section, each color selected
      e. Detectable Warning Surfaces: one tile or 12" x 12" piece.

C. Quality Assurance
   1. Furnish Installer’s certification that it is a firm with not less than 5 years of successful experience in the installation of specified materials.
   2. Manufacturer's certification from an independent testing laboratory that resilient flooring complies with the fire test performance requirements
   3. Certification from flooring installer that the substrate surfaces have been examined and are acceptable

D. FloorScore Certification
   1. Provide documentation that each product is FloorScore™ certified.

E. Low Emitting Materials Compliance Submittals
   1. Provide documentation for each adhesive to be used indicating that the adhesives comply with V.O.C. requirements as stated in Specification Section G01600.

F. Sustainability Submittals
   1. Recycled Content
      a. Submit documentation of recycled content consisting of product data or manufacturer’s statement as applicable for the following:
         1) Vinyl composition tile.
         2) Sheet vinyl
         3) Resilient base
         4) Slip retardant vinyl tile
         5) Slip retardant sheet vinyl
      b. Submit Contractor’s Sustainable Materials Form with complete information on recycled content for resilient flooring and base materials provided under the work of this section in accordance with Section S01352, Sustainability Requirements. Include cost of materials and percentage, by weight, of materials that have post-consumer or pre-consumer recycled content.

1.06 QUALITY ASSURANCE

A. Qualifications
   1. Furnish Installer’s certification that it is a firm with not less than 5 years of successful experience in the installation of specified materials.

B. Certifications
   1. Furnish manufacturer's certification from an independent testing laboratory acceptable to authorities having jurisdiction that resilient flooring complies with the fire test performance requirements specified herein.
   2. Furnish certification from flooring installer that the substrate surfaces have been examined and are acceptable for installation of the Work of this Section.

C. Fire Test Performance
   1. Provide resilient flooring and wall base material that comply with the following performance criteria as determined by an independent testing laboratory acceptable to authorities having jurisdiction.
   2. Resilient flooring - Shall conform to Class 1:
      a. Critical Radiant Flux (CRF): Not less than 0.45 watts per sq. cm. as per ASTM E648 or NFPA 253
      b. Specific Optical Density Rating: Less than 450 as per ASTM E662.
   3. Resilient base - Shall conform to either Class B per ASTM E84 or Class 1 per ASTM E648 or NFPA 253: Compliance with Sections BC 803.1.1 and BC 806.6 of 2014 NYC Building code is also required.
      a. Class B per ASTM E84
         1) Flame Spread Index: Not more than 75 as per ASTM E84.
         2) Smoke Density Index: Not more than 450 as per ASTM E84.
      b. Class 1 per ASTM E648 or NFPA 253: Critical Radiant Flux (CRF) of not less than 0.45 watts per sq. cm.

D. Slip Resistance
   1. All flooring materials with coatings shall have a slip resistance of at least 0.60 when tested in accordance with ASTM D2047.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Delivery
   1. Deliver material in good condition to the site in manufacturer's original unopened containers with label information clearly marked thereon.

B. Storage
   1. Store materials (resilient flooring, base and adhesives) in location protected from the weather and having a minimum temperature of 68oF for at least 24 hours prior to start of laying of flooring.

1.08 FIELD CONDITIONS

A. Environmental Requirements
   1. Continuously heat spaces to receive flooring to a temperature of 68oF for at least 48 hours prior to flooring installation, and for 48 hours after installation. Maintain a minimum temperature of 55°F. thereafter. Do not install products until they are at the same temperature as the spaces in which they are installed.
   2. Install resilient flooring and accessories after other finishing operations, including painting, have been completed. Do not install resilient flooring over concrete slabs until the latter has been cured and is sufficiently dry to achieve bond with adhesive as determined by manufacturer's recommended bond and moisture test. The Contractor shall allow sufficient time for the slab to dry out before installation of resilient flooring is started.

1.09 MAINTENANCE

A. Extra Materials
   1. Furnish additional floor covering materials for replacement and maintenance to the Authority's Representative (to be transferred to the custodian), including manufacturer maintenance information.
   2. Furnish materials of each size, color pattern, and type of material included in the Work. All materials must be new, clean, undamaged and in original containers.

3. Furnish materials at the rate of one (1) carton for each 1000-1500 sq. ft of material installed.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Vinyl Composition Tile
   1. Armstrong World Industries, Inc. Lancaster, PA:
      a. "Standard Excelon Imperial Texture".
   2. Tarkett Inc. Houston Texas: Azrock® by Tarkett- Standard VCT and Expressions™ by Tarkett
   3. Mannington Mills, Inc.: “Essentials” and “Designer Essentials”

B. Solid Vinyl Sheet Flooring
   1. Armstrong World Industries, Inc.: "Medintech".
   2. Mannington Mill: “Homogeneous Sheet Flooring”
   3. Johnsonite® a Tarkett Company: “Optima iQ Homogeneous Sheet”

C. Slip Retardant Vinyl Sheet Flooring
   1. Armstrong World Industries, Inc: “Safeguard” (“Safeguard Spa” is not acceptable)
   2. Altro Floors: “Impressionist II”
   3. Mannington Mill: “Assurance II”
   4. Johnsonite® a Tarkett Company : “Granit Safe-T”

D. Slip Retardant Vinyl and Vinyl Composition Tile
   1. Armstrong: “Safety Zone”
   2. Azrock/tarkett: “Cortina Grande SR” or “Color Essence SR”

E. Resilient Wall Base and Accessories (Vinyl or Rubber base)
   1. Johnsonite/Tarkett
      a. Armstrong World Industries, Inc
      b. Stoler Industries/Allstate Rubber Corp., Dalton GA
      c. Roppe Corporation,2 Fostoria, OH
      d. Burke Flooring, San Jose CA
   2. Vinyl Composition Feature Strips
      a. Armstrong World Industries, Inc.
      b. Azrock/Tarkett
   3. Detectable Warning Surfaces
      a. Detectable Warning Systems Inc., Jacksonville, FL: AlertTile
      b. Access Products Inc., Buffallo , NY:
         1) Access Tile®-Surface Applied
   4. Moisture Test Kits:
      a. WagnerMeters Rouge River, OR
      b. Floor Seal Technology, Inc., Milpitas, CA 95112

2.02 MATERIALS

A. Vinyl Composition Tile (VCT)
   1. Provide VCT product, in compliance with ASTM F1066, Class 2 through pattern, asbestos free, complying with the following requirements:
      a. Size: 12" x 12" x 1/8" gage
      b. Color: As indicated on the drawings
      c. Light Reflectivity: Maximum range as per Manufacturers Light Reflectivity Tables
         1) Corridors
      d. Vinyl composition tile shall be manufactured with a minimum of 1% of post consumer content materials.
      e. Tile shall be FloorScore™ certified.

B. Solid Vinyl Sheet Flooring.

1. Provide non-layered, non backed solid vinyl sheet flooring in compliance with ASTM F1913.
2. Sheet Width: 6'-0" wide rolls
3. Thickness: 0.080” minimum
4. Color: as selected by Architect
5. Welding rod: PVC welding rod, as produced by manufacturer of flooring and as intended for heat sealing of joints. Color as selected by Architect.
6. Sheet vinyl shall be manufactured with a minimum of 1% of post consumer content materials.
7. Flooring shall be FloorScore™ certified.

C. Slip Retardant Vinyl Sheet Flooring.
1. Provide slip retardant sheet flooring, for installation as indicated on Drawings in compliance with the following requirements:
   a. Thickness: 0.080”, minimum
   b. Color: as selected by Architect
   c. Slip Resistance Tests: Static coefficient in accordance with the James Machine Test D 2047 (modified) in excess of 0.60 to meet Department of Commerce Safety Standards and ADA requirements.
   d. Slip resistant sheet vinyl shall be manufactured with a minimum of 1% of post consumer content materials.
   e. Flooring shall be FloorScore™ certified.

D. Slip Retardant Vinyl Tile and VCT
1. Provide slip retardant vinyl or vinyl composition tile, for installation as indicated on Drawings in compliance with ASTM F1066, Class 2 through pattern, asbestos free, complying with the following requirements:
   a. Size: 1/8" gage, 12" x 12" or 16” x 16”
   b. Color: As indicated on the drawings
   c. Light Reflectivity: Maximum 35% as per Manufacturers Light Reflectivity Tables
   d. Slip Resistance Tests: Static coefficient in accordance with the James Machine Test D2047 (modified) in excess of 0.60 to meet Department of Commerce Safety Standards and ADA requirements.
   e. Slip resistant vinyl tile shall be manufactured with a minimum of 1% of post consumer content materials.
   f. Tile shall be FloorScore™ certified.

E. Detectable Warning Surfaces (Interior locations)
1. Detectable Warning Surfaces shall be in compliance with the requirements of ANSI A117.1-2009.
2. Material: Composite
3. Thickness: 1/8” to 1/4”
4. Size: Manufacturer’s standard sizes.
5. Manufacturer's standard colors as selected by Project Architect.

2.03 ACCESSORIES

A. Resilient Base
1. Resilient base shall be in compliance with ASTM F1861. Standard solid colors as selected:
2. 4" high, 1/8" thick (tolerance +.005"), compression type.
3. Top corner rounded, bottom coved, arranged for above floor application. Provide straight base for carpeting.
4. Provide job formed inside and outside corners.
5. Colors as selected by Architect/Matte finish.
6. Base shall be FloorScore™ certified.

B. Resilient Edge Strips, Transition Strips, Reducer Strips, etc.

1. 1/8" thick, homogeneous vinyl or rubber, tapered or bullnose edge, color to match flooring, or as selected by Architect from standard colors available; not less than 1" wide. Material shall be FloorScore™ certified.

C. Resilient Feature Strips
1. 1/8” thick, vinyl composition or rubber, 1” x 24” standard colors. Material shall be FloorScore™ certified.

D. Adhesives
1. Type as recommended by manufacturer for particular resilient flooring and base.
2. Adhesive suitable for adhesion to plaster, concrete, masonry, metal or wood, waterproof after drying to resist action of water.
3. All adhesives used shall comply with V.O.C. requirements as stated in Specification Section G01600.

E. Edging Strip
1. Brass or White alloy metal.
2. Under flange type, with anchors suitable for type of subfloor indicated.

F. Vinyl Saddles
1. Flush or tapered as indicated.
2. Thickness to suit abutting floor covering material.
3. Colors as selected by Project Architect.

G. Concrete Slab Primer
1. Resilient flooring adhesive manufacturer's recommended primer for preparation of porous or dusty concrete, non-staining type.

H. Self-Leveling Compound
1. As specified in specification section 03542- Cement based self leveling underlayment, hydraulic-cement-based, polymer-modified, self-leveling product that can be applied in minimum uniform thicknesses of 1/8” (3 mm) and that can be feathered at edges to match adjacent floor elevations.
a. Leveling compounds containing gypsum are not permitted.

I. Flash Patching Compound
1. As specified in specification section 03542- Cement based self leveling underlayment, Hydraulic-cement-based, polymer-modified product that can be trowel-applied from 1/4” to a feather-edge to match adjacent floor elevations.
a. Gypsum-based compounds are not permitted

J. Floor Polish
1. Fed. Spec. P-F-430C, heavy traffic water emulsion floor wax, as recommended by flooring manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

A. General
1. Installer shall inspect subfloor surfaces to determine that they are satisfactory. A satisfactory subfloor surface is one that is clean, dry, flat, smooth, level and free from cracks, holes, ridges, or coatings preventing adhesion, and other defects impairing performance or appearance. Notify the Authority of conditions, which will adversely affect flooring installation. Do not proceed with installation until conditions have been corrected.
2. Installation of the resilient flooring (or any component thereof) shall indicate the Contractor’s acceptance of the subfloor as a satisfactory substrate to its work.
3. Do not allow resilient flooring work to proceed until subfloor surfaces are satisfactory.

B. Concrete Subfloor
1. Perform bond and moisture tests on concrete subfloors to determine if surfaces are sufficiently cured and dry as well as to ascertain presence of curing, sealing, hardening or any other compounds.

a. Bond Tests shall be in accordance with re-silient flooring Manufacturer's Installation Manual.
b. Moisture vapor transmission shall not exceed 5 pounds per 1,000 square feet in 24 hours. Tests shall be in accordance with ASTM F1869.
c. Installer shall provide certification that the concrete substrate surfaces have been examined and are acceptable in accordance with this Article.

C. Wood Subfloor
1. Verify that wood subflooring complies with the requirements specified in Section 06100 - Rough Carpentry.
2. Verify that underlayment surface is free of irregularities and substances that may interfere with adhesive bond, show through surface or stain flooring. Also verify that end joints and joints between panels are staggered in relation to each other and that fasteners are flush with the surface of the subfloor.
a. Installer shall provide certification that the wood substrate surfaces have been examined and are acceptable in accordance with Paragraph 1.06B.

3.02 PREPARATION

A. Unless otherwise specified, follow the materials manufacturers' written instructions.

B. Remove dirt, grease, oil, paint, varnish, wax, sealers, curing or hardening compounds and contaminants which may impair the full bonding of the materials to the substrate. Avoid organic solvents. Remove residual adhesives as recommended by the flooring manufacturer.

C. Concrete Subfloor
1. Prepare concrete slabs in accordance with ASTM F710.
a. Remove trowel marks or other projections by grinding or sanding.
b. Level uneven surfaces with smooth troweling of mstic underlayment. Follow underlayment manufacturer's application and curing instructions.
c. Provide a substrate surface with not more than 1/8" in 10'-0" variation from level or plane of required slope.
d. Treat porous and dusty concrete with primer after vacuum cleaning the surface. Apply primer at the rate recommended by the primer manufacturer.
e. Broom or vacuum clean subfloor prior to installation of flooring.

3.03 INSTALLATION - GENERAL

A. Install resilient flooring materials in compliance with manufacturer's latest printed instructions.

B. Scribe cut and fit resilient flooring to permanent fixtures, pipe trench covers, built-in cabinets, pipes, outlets columns, walls and partitions.

C. Tightly cement resilient flooring to sub base without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks or other surface imperfections.

D. Hand roll flooring at perimeter of each covered area to assure adhesion.

E. Spaces and areas where flooring is being installed shall be closed to traffic and other trades until flooring has set.

F. Protect finished installation at all times. Contractor will be held responsible for all damage to flooring until Final Acceptance.

3.04 INSTALLATION OF TILE FLOORS

A. Lay tile from center marks established with principal walls, discounting minor offsets, so that tile at opposite edges of room area are of equal width. Adjust as necessary to avoid use of cut widths less than 1/2 tile at room perimeters. Lay tile square to room axis.

B. Match tiles for color and pattern by using tile from cartons in same sequence as manufactured and packaged if so numbered. Cut tile neatly around all fixtures. Broken, cracked, chipped, or deformed tiles are not acceptable.
1. Lay tile in patterns indicated and as directed by the Project Architect.
2. Lay adjacent tile with direction of texture opposite adjoining tiles.

C. Adhere tile flooring to substrates using full spread of adhesive to edge of covered area, applied as directed by tile manufacturer.

D. Cut tiles using equipment and methods recommended by respective tile manufacturer. Provide smooth cut edges tightly fit to adjacent work.

3.05 INSTALLATION OF SOLID VINYL SHEET FLOORING

A. Lay sheet flooring to provide as few seams as possible with economical use of materials. Match edges for color shading and pattern at seams.

B. Adhere sheet flooring to substrates using method approved by flooring manufacturer for applicable type of sheet flooring and substrate.

C. Prepare seams in vinyl sheet flooring with manufacturer's special routing tool and heat weld with vinyl thread or matching PVC rods.

D. Provide integral flash cove base where shown on Drawings, including cove support strip and metal top edge strip.

3.06 INSTALLATION OF SLIP-RETARDANT VINYL SHEET FLOORING

A. General
   1. Installation same as Article 3.05 for Solid Vinyl Sheet Flooring in addition to the following:
      a. Caulk around penetrations with manufacturer's mastic. Mastic color shall match vinyl flooring.
      b. Do not apply sealer or wax on flooring. Machine scrub, using nylon or hard bristle brushes and floor cleaner recommended by the manufacturer.

3.07 INSTALLATION OF ACCESSORIES

A. Apply wall base to walls, columns, pilasters, casework and other permanent fixtures in rooms or areas where base is required. Install base in lengths as long as practicable, with inside and outside corners job formed from base materials. Corner returns shall be not less than 6” in length and corners shall be formed without producing discoloration at bends. Tightly bond base to substrate throughout length of each piece, with continuous contact at horizontal and vertical surfaces. Do not stretch base during installation.
   1. On masonry surfaces, or other similar irregular substrates, fill voids along top edge of resilient wall base with manufacturer's recommended adhesive filler material. Color to match base material.

B. Place resilient edge strips tightly butted to flooring and secure with adhesive. Install edging strips at edges of flooring which would otherwise be exposed. Locate strips under doors.

C. Where color of flooring changes between spaces, install feature strip between the two colors. Feature strip shall be centered under the door when it is in a closed position.

D. Apply resilient accessories to areas as indicated and in strict accordance with manufacturer's installation instructions

3.08 DETECTABLE WARNING SURFACES

A. Install surface units in accordance with Manufacturer's recommendations, as indicated on Drawings and in compliance with ANSI/ICC A117.1 2009 Section 705 requirements.

3.09 CLEANING

A. Perform the following operations immediately after completing resilient product installation:
   1. Remove adhesive and other blemishes from exposed surfaces.
   2. Sweep and vacuum surfaces thoroughly.
   3. Damp-mop surfaces to remove marks and soil.
      a. Do not wash surfaces until after time period recommended by manufacturer.

3.10 PROTECTION

A. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods recommended in writing by manufacturer.
   1. Apply protective floor polish to horizontal surfaces of vinyl composition tile that are free from soil, visible adhesive, and surface blemishes if recommended in writing by manufacturer.
      a. Use commercially available polish acceptable to manufacturer for vinyl composition tile.
   2. Floor polish is not required for Slip-retardant Vinyl Tile. Apply protective floor polish to horizontal surfaces of Slip-retardant vinyl tile only if recommended in writing by tile manufacturer.

END OF SECTION