

SECTION 09650
RESILIENT FLOORING AND BASE

PART 1 - GENERAL

1.01 PROVISIONS INCLUDED

- A. The general provisions of the Contract, including General and Supplementary General Conditions, and Division 1 General Requirements, apply to work specified in this Section.

1.02 SUMMARY

- A. Work Included:
 - 1. Rubber tile on stair landings; rubber stair accessories.
 - 2. Vinyl composition tile on concrete subfloors.
 - 3. Rubber base, where indicated.

1.03 REFERENCED STANDARDS

- A. American Society for Testing and Materials (ASTM):
 - 1. ASTM F 710, Standard Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring.
 - 2. ASTM F 1861, Specification for Resilient Wall Base.

1.04 SUBMITTALS

- A. Product Data: Manufacturers' illustrated project literature, detailed specifications describing composition and dimensions, and installation instructions, for each type of product specified.

- B. Samples:

- 1. For initial selection, submit color charts consisting of chips of actual tiles.
- 2. For verification, submit:
 - a. Tiles: Full-size tiles of each different color and pattern.
 - b. Wall base: 12 inch long sample, each color.
 - c. Transition and reducer strips: 12 inch long sample of each type and color.

- C. Closeout Submittals:

- 1. Submit maintenance instructions for resilient floor covering materials, for inclusion in the project Operation and Maintenance manual, specified in Section 01770.
- 2. Extra materials.

1.05 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.
- B. Source Limitations: Obtain each type, color, and pattern of resilient flooring material from a single source with resources to provide products of consistent quality in appearance and physical properties without delaying progress of the Work.
- C. Fire Resistance: Provide products with the fire-test-response characteristics specified in Part 2 of this section, as determined by testing identical products in accordance with the test methods indicated below, by a testing and inspection agency acceptable to authorities having jurisdiction:
 - 1. Critical Radiant Flux: ASTM E 648.
 - 2. Smoke Density: ASTM E 662.
- D. Slip-Resistance: Provide products with the slip-resistance characteristics specified in Part 2 of this section, as determined by testing identical products in accordance with the test methods indicated below, by a testing and inspection agency acceptable to authorities having jurisdiction:
 - 1. Coefficient of Friction: ASTM D2047, James Machine test, or by other similar method acceptable to authorities having jurisdiction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to Project site in original manufacturer's 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°F (10°C) and 90°F (32°C).
- C. Store tiles on flat surfaces.
- D. Move resilient flooring materials into spaces where they will be installed at least 48 hours in advance of installation; allow longer time for conditioning if recommended by the manufacturer.

1.07 PROJECT CONDITIONS

- A. Do not install flooring over concrete until concrete has cured and is sufficiently dry to bond with adhesive, as determined by flooring manufacturer's recommended bond and moisture test.
- B. Maintain a temperature of not less than 70°F (21°C) or more than 95°F (35°C) 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. Thereafter, maintain temperature between 55°F (13°C) and 95°F (35°C).
- C. Before installing resilient flooring, bring materials to the same temperature as the space where they are to be installed.

- D. Close spaces to traffic during flooring installation and for time period after installation recommended in writing by manufacturer.
- E. Install tiles and accessories after other finishing operations, including painting, have been completed.

1.08 EXTRA MATERIALS

- A. Furnish extra materials matching products installed, in quantities specified below, packaged with protective covering for storage and identified with labels clearly describing contents. Deliver extra materials to Owner.
 - 1. Landing Tiles: One box for each 50 boxes or fraction thereof, of each type, color and pattern installed.
 - 2. Tread and Riser Covers: 1 unit for each 1-story rise of stairs on which covers are installed.
 - 3. Base: 10 linear feet for each 500 linear feet or fraction thereof of each different type and color of resilient wall base installed.

PART 2 - PRODUCTS

2.01 RUBBER FLOORING

- A. Manufacturer: Nora Rubber Flooring, Freudenberg Building Systems, Inc.; No Substitutions.
- B. Rubber Floor Tile: ASTM F 1344 and as follows:
 - 1. Hardness: Not less than required by ASTM F 1344.
 - 2. Wearing Surface: Textured.
 - 3. Thickness: 0.125 inch (3.2 mm).
 - 4. Size: 24 by 24 inches (610 by 610 mm).
 - 5. Fire-Test-Response Characteristics: Critical Radiant Flux Class I, not less than 0.45 W/sq. cm per ASTM E 648.
 - 6. Static Coefficient of Friction: 0.60 or higher.
- C. Style, pattern, and shapes: "Norament 925 B" "Hammered" pattern, in the following forms:
 - 1. One-piece tread and nosing covers.
 - 2. Tiles, 50 cm x 50 cm by 2.7 mm overall thickness. (Install on landings.)
- D. Colors: Norament Color 2192 "Terracotta" to match existing.

2.02 VINYL COMPOSITION TILE

- A. Vinyl Composition Tile: Products complying with ASTM F 1066, Class 2 (through pattern tile), smooth wearing surface, 12 x 12 inch face size, 0.125 inch (3.2 mm) thick.

1. Fire-Test-Response Characteristics: Critical Radiant Flux Class I, not less than 0.45 W/sq. cm per ASTM E 648.
2. Slip-Resistance: Static coefficient of friction of not less than 0.6 for tile to be installed on level surfaces and not less than 0.8 for tile to be installed on ramped surfaces.
3. Pattern & Color: Furnish pattern and colors selected by Architect from manufacturer's full-range of standard colors.

B. Product: Armstrong "Imperial Texture Standard Excelon." No Substitutions.

2.03 RESILIENT BASE

A. Rubber Base: ASTM F 1861, Type TS (rubber, vulcanized thermoset) or TP (rubber, thermoplastic), Group I (solid, homogeneous), 1/8" (3.2 mm) thick by 4 inches (102 mm) high.

B. Product: Freudenberg Building Systems Inc., Nora Flooring, 4: high cove base. Furnish in coils to minimize seams.

1. Color: To be selected by Architect.
2. Accessories: Pre-formed corners.

2.04 INSTALLATION ACCESSORIES

A. Concrete Slab Primer: Nonstaining type as recommended by flooring manufacturer.

B. Leveling and Patching Compounds: Latex-modified, portland-cement-based formulation, trowelable consistency, provided or approved by resilient flooring manufacturer for applications indicated.

1. Acceptable Products: Armstrong "S-105", Flintkote "Latex Underlayment" or "Lev-L-Astic" by Allied.

C. Adhesives (Cements): Water-resistant adhesive recommended by resilient flooring manufacturer to suit each type of resilient floor tile products and actual substrate conditions for this project.

D. Resilient Edge Reducer Strips: Homogenous vinyl or rubber composition, tapered or bullnose edge, matching flooring in thickness, color as selected by Architect, not less than 1" wide.

E. Protective Floor Polish: Commercial grade, metal, cross-linked acrylic product acceptable to tile manufacturer. Coordinate selection of floor polish with Owner's maintenance service.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. General: With Installer present, examine areas where resilient flooring will be installed, to verify that substrates and conditions are satisfactory for resilient flooring installation. A satisfactory subfloor is dry, flat, smooth and free from cracks, holes and ridges and free from chalking.
- B. Subfloor Moisture Conditions: Moisture emission rate of not more than 3 lb/1000 sq. ft./24 hours (14.6 kg/1000 sq. m/24 hours) when tested by calcium chloride moisture test in compliance with CRI 104, 6.2.1, with subfloor temperatures not less than 55°F (12.7°C).
 - 1. Before beginning installation, perform one moisture condition test for each 2000 square feet for floor area, and at least one test in each major area where resilient flooring is to be installed.
- C. Concrete Subfloors: Verify that concrete slabs comply with ASTM F710, and the following:
 - 1. Slab substrates are dry and free of curing compounds, sealers, hardeners, and other materials whose presence would interfere with bonding of adhesive. Determine adhesion and dryness characteristics by performing bond and moisture tests recommended by resilient flooring manufacturer.
 - 2. Flatness and Surface Finish: Subfloor surfaces should vary not more than 1/8" in 10"; and maximum high and low points should not occur in less than 20'.
 - 3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits of any kind.
- D. Bond Tests: Before beginning installation, perform bond tests on floors to receive resilient flooring. Perform one bond test for each 2000 square feet of flooring to be installed, and at least one test in each major area.
 - 1. Using specified flooring materials and adhesives, install 3 foot square trial panels at various typical locations near walls and columns (out of traffic paths which may have worn concrete surfaces).
 - 2. Allow flooring to cure 72 hours and then attempt to peel flooring up.
 - 3. If flooring is not difficult to remove and if adhesive does not cling to both subfloor and flooring, correct problems with concrete subfloor before proceeding with work of this Section.
 - 4. Repeat bond tests until secure bond is demonstrated.
- E. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

- A. General: Comply with flooring manufacturer's installation specifications to prepare substrates indicated to receive resilient flooring.

- B. Use trowelable leveling and patching compounds per flooring manufacturer's directions to fill cracks, holes, and depressions in substrates.
- C. Remove coatings, including curing compounds, and other substances that are incompatible with flooring adhesives and that contain soap, wax, oil, or silicone, by using a terrazzo or concrete grinder, a drum sander, or a polishing machine equipped with a heavy-duty wire brush.
- D. Broom or vacuum clean substrates to be covered by flooring immediately before installation. Following cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust.
- E. Apply concrete slab primer, if recommended by flooring manufacturer, prior to applying adhesive. Apply according to manufacturer's directions.

3.03 RESILIENT FLOORING INSTALLATION, GENERAL

- A. General: Comply with flooring manufacturer's installation directions.
- 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 at perimeter that equal less than one-half of a tile. Install tiles square with room axis, unless otherwise indicated.
- C. Do not use tiles which are broken, cracked, chipped, or deformed; discard these tiles.
- D. Extend flooring into toe spaces, door reveals, closets, and similar openings. Scribe, cut, and fit resilient flooring to butt tightly to vertical surfaces, pipes, thresholds, and similar surfaces.
- E. Unless otherwise directed by tile manufacturer, use full spread of adhesive. Comply with tile manufacturer's directions for trowel notching, adhesive mixing, and adhesive open and working times. Hand roll tiles where required by tile manufacturer.
- F. Installed flooring shall be well-adhered to subfloor and free of open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.
- G. Install reducer strips at edges of resilient flooring that would otherwise be exposed.

3.03 VCT ON CONCRETE FLOORS

- A. Match tiles for color and pattern by selecting tiles from cartons in same sequence as manufactured and packaged, if so numbered.
- B. Lay tiles with grain running alternating in adjacent tiles (basket weave).

3.04 RESILIENT FLOORING INSTALLATION IN STAIRS

- A. Install rubber tiles on landings; align seams parallel to stairwell walls.

- B. Tread and Riser Covers: Adhere to tread, riser, and nosing substrates with adhesive recommended by tread cover manufacturer. Apply full coat of adhesive; mix, apply and cure in accordance with adhesive manufacturer's printed instruction.
 - 1. Preparation: Fill void between stair nosing and tread with stair-tread-nose filler. Mix and apply filler in accordance with filler manufacturer's written instructions.
 - 2. Caution: 2-component epoxy adhesive does not hold until it has set. Make sure tread does not move until epoxy has cured.

3.05 INSTALLATION OF RESILIENT BASE

- A. Extent: Provide resilient base wherever indicated. Apply resilient base to walls, columns, pilasters, and other construction in rooms or areas where base is scheduled or installed.
- B. Install resilient base after the resilient flooring has been installed so that base will cover edge of flooring.
- C. Install pre-formed corners before installing straight lengths of base.
- D. Install base in as long lengths as practicable. Tightly bond base to backing throughout the length of each piece, with continuous contact at horizontal and vertical surfaces. Immediately clean excess adhesive from wall and floor surfaces.

3.06 CLEANING AND PROTECTION

- A. Remove adhesive and other surface blemishes immediately after completing resilient flooring installation; use cleaner recommended by resilient flooring manufacturer. Sweep or vacuum floor. Do not wash floor until after time period recommended by resilient flooring manufacturer. Damp-mop to remove black marks and soil.
- B. Temporary Polish on Vinyl Composition Tile: After damp mopping, apply 2 coats of floor polish to impart temporary protection during remainder of the construction period.
- C. Protect flooring against mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period. Use protection methods indicated or recommended by resilient flooring manufacturer.
 - 1. Cover flooring with undyed, untreated building paper until inspection for Substantial Completion.
 - 2. Do not move heavy and sharp objects directly over flooring. Place plywood or hardboard panels over resilient flooring and under objects while they are being moved. Slide or roll objects over panels without moving panels.
- D. Final Cleaning, General: Allow flooring adhesive to set for at least one week after installation, or longer time period if recommended by resilient flooring manufacturer, before final cleaning. Perform final cleaning not more than 4 days prior to inspection at time of Substantial Completion. Clean resilient flooring to remove construction dirt, and apply final polish or buff to

shine, as appropriate for each flooring type. Before wet-cleaning, buffing, or polishing, remove loose soil, sand, and grit by sweeping or dust-mopping. Comply with resilient flooring manufacturer's instructions for type of cleaner and scrubbing equipment, so that flooring is not abraded or damaged.

- E. Final Cleaning of Vinyl Composition Tile:
 - 1. Strip temporary polish before scrubbing, unless Contractor can demonstrate that flooring can be cleaned to Architect's satisfaction by manufacturer's standard cleaning methods, without stripping.
 - 2. Scrub, rinse floor thoroughly, and allow to dry.
 - 3. Apply three coats of commercial floor polish. Apply in accordance with floor polish manufacturer's instructions.

- F. Final Cleaning of Rubber Flooring: After scrubbing, buff to shine. Rubber flooring does not require polish.

END OF SECTION 09650