SECTION 09652

RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section includes the following:

1. Resilient wall base.
2. Resilient flooring accessories.

B. Related Sections:

1. Resilient flooring is specified in Section 09654.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. Product Data: Submit for each type of product specified.

1. Furnish MSDS sheet or manufacturer's data indicating VOC content of adhesive.

C. Samples:

1. For initial selection purposes of manufacturer's standard sample sets in form of pieces cut from each type of product specified showing full range of colors and patterns available.
2. Samples for verification purposes in manufacturer's standard sizes, but not less than 12-inches long, of each different color and pattern of product specified.

1.04 QUALITY ASSURANCE

A. Fire Performance Characteristics: Provide products with the following fire performance characteristics as determined by testing products per ASTM test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Critical Radiant Flux: 0.45-watts per sq. cm or more per ASTM E648.
2. Smoke Density: Less than 450 per ASTM E662.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Maximum VOC content of adhesives shall not exceed 50 g/L.

B. Applicable LEED Credits – Refer to Section 01352:

1. Credit EQc4.1 – Adhesives and Sealants.

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- and 90-deg. F.

C. Move products into spaces where they will be installed at least 48-hours in advance of installation.

1.07 PROJECT CONDITIONS

A. Maintain a minimum temperature of 70-deg. F. in spaces to receive products specified in this Section for at least 48-hours prior to installation, during installation, and for not less than 48-hours after installation. After this period, maintain a temperature of not less than 55-deg. F.

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

C. Close spaces to traffic during installation of products specified in this Section.

D. Provide for continuous ventilation during installation using as close to 100-percent outside air as possible.

1.08 SEQUENCING AND SCHEDULING

A. Sequence installation with other construction to minimize possibility of damage and soiling during remainder of construction period.

1.09 EXTRA MATERIALS

A. Deliver extra materials to Owner. Furnish extra materials matching products installed as described below, packaged with protective covering for storage, and identified with labels clearly describing contents.

1. Furnish not less than 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 RESILIENT WALL BASE

A. Rubber Wall Base: Burke, Flexco, Johnsonsite, VPI or approved equal complying with FS SS-W-40, Type I.

1. Style: Cove with top-set toe.

2. Height: As indicated.

3. Lengths: Coils in lengths standard with manufacturer but not less than 100-feet.

4. Exterior Corners: Premolded or formed on job at installer's option.

5. Interior Corners: Premolded or formed on job at installer's option.

6. Ends: Premolded.

7. Color: To be selected by the Architect.

2.02 RESILIENT RUBBER ACCESSORIES

A. Provide reducer strip for resilient flooring.

B. Profile and Dimensions: As indicated.

C. Color: As selected by the Architect from manufacturer's standards.

2.03 INSTALLATION ACCESSORIES

A. Adhesives: Provide type and brands of VOC-compliant, solvent free water-resistant adhesive as recommended by manufacturer of resilient wall base and accessories for conditions of installation. W.F. Taylor Company, Inc. 800.397.4583, "Envirotec 2095", XL Corporation 706.625.0025 "Lifespan 2000", Sinan Company 916.753.3104 "AURO Natural Adhesives" or approved equal.

PART 3 - EXECUTION

3.01 PREPARATION

A. Comply with manufacturer's installation specifications for preparing substrates indicated to receive products indicated.

B. Use trowelable leveling and patching compounds per manufacturers 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 immediately before installing products specified in this Section. Following cleaning, examine substrates for moisture, alkaline salts, carbonation, or dust.

3.02 INSTALLATION

A. Install products specified in this Section using methods indicated according to manufacturer's installation directions.

B. Apply resilient wall base to walls, columns, pilasters, casework, and other permanent fixtures in rooms and areas where base is required. Install wall base in lengths as long as practicable. Tightly adhere wall base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

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.

2. Install inside and exterior corners before installing straight pieces.

3. Where preformed inside corners are not used, form on job from straight pieces of maximum lengths possible by cutting an inverted V-shaped notch in toe of wall base at the point where corner is formed. Shave back of base where necessary to produce snug fit to substrate.

4. Where preformed outside corners are not used, form on job from straight pieces of maximum lengths possible by shaving back of base at point where bending will occur. Remove a strip perpendicular to length of base and only deep enough to produce a snug fit without bends whitening or removal of more than half the thickness of wall base.

C. Place resilient accessories so they are butted to adjacent materials of type indicated and bond to substrates with adhesive. Install reducer strips at edges of flooring that otherwise would be exposed.

3.03 CLEANING AND PROTECTION

A. Perform the following operations immediately after completing installation:

1. Remove visible adhesive and other surface blemishes using cleaner recommended by manufacturers of resilient product involved.

2. Damp-mop resilient accessories to remove black marks and soil.

B. Clean products specified in this Section not more than 4-days prior to dates scheduled for inspections intended to establish date of Acceptance of Work in each area of Project. Clean products using method recommended by manufacturer.

3.04 WASTE MANAGEMENT

A. Close and seal tightly all partly used adhesive containers and store protected in well ventilated fire-safe area at moderate temperatures.

B. Place used adhesive tubes and containers in areas designated for hazardous materials.

END OF SECTION

SECTION 09654

RESILIENT FLOORING

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section includes resilient floor coverings.

B. Related Sections:

1. Resilient base and accessories are specified in Section 09652.

2. Water vapor emission control testing is specified in Section 09699.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. Product Data: Submit for each type of product specified. Include certification by floor covering manufacturer that products supplied for installation comply with Sacramento Metro Air Quality Management District controlling use of volatile organic compounds (VOC's).

1. Regional Materials: Furnish product data or letter stating the location (closest city, state) where product was manufactured (final processing or assembly) and, if available, the location where raw materials were harvested, extracted or recovered (mine, quarry, plantation, forest, recycling recovery center, etc.).

2. Furnish MSDS sheet or manufacturer's data indicating VOC content of adhesive.

C. Shop Drawings: Show location of seams and edge strips. Indicate location of columns, doorways, enclosing partitions, built-in cabinets, and locations where cutouts are required in flooring.

D. Samples:

1. For verification of selected colors, in form of two pieces of 4-inch by 6-inch flooring of each required color, welded together with matching heat welding rod, showing full range of variations expected in these characteristics.

2. Sample of integral coved base outside corner showing heat welding techniques to be used in forming outside corners. Modify as directed by the Architect until corner sample is approved by the Architect.

E. Installer certificates signed by floor covering manufacturer certifying that Installers comply with specified requirements.

F. Maintenance data for resilient floor coverings.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: Engage Installer that is certified by floor covering manufacturer as competent in the technique for heat-welding seams.

B. Fire Performance Characteristics: Provide resilient floor coverings with the following fire performance characteristics as determined by testing products per ASTM test method indicated below by Underwriters Laboratories, Inc. (UL) or another testing and inspecting agency acceptable to authorities having jurisdiction.

1. Critical Radiant Flux: 0.45-watts per sq. cm or more per ASTM E648.

2. Smoke Density: Less than 450 per ASTM E662.

C. All materials shall comply with the requirements of local Air Quality Management District (AQMD) governing the emission of Volatile Organic Compounds.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Maximum VOC content of adhesives shall not exceed 50 g/L.

B. Applicable LEED Credits – Refer to Section 01352:

1. Credit EQc4.1 – Adhesives and Sealant.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Deliver resilient floor coverings and installation accessories 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 flooring materials in dry spaces protected from the weather with ambient temperatures maintained between 50- and 90-deg. F.

C. Move resilient floor coverings and installation accessories into spaces where they will be installed at least 48-hours in advance of installation.

1.07 PROJECT CONDITIONS

A. Maintain a minimum temperature of 70-deg. F. in spaces to receive resilient floor coverings for at least 48-hours prior to installation, during installation, and for not less than 48-hours after installation. After this period, maintain a temperature of not less than 55-deg. F.

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

C. Close spaces to traffic while installing resilient floor covering.

D. Provide for continuous ventilation during installation using as close to 100-percent outside air as possible.

1.08 SEQUENCING AND SCHEDULING

A. Install resilient floor coverings and accessories after other finishing operations, including painting, have been completed.

B. Do not install resilient floor coverings over concrete slabs until the slabs have cured and are sufficiently dry to bond with adhesive as specified in Section 09699.

PART 2 - PRODUCTS

2.01 RESILIENT FLOOR COVERINGS

A. Sheet Vinyl (SV-1): Armstrong "Translations", color not indicated or scheduled will be selected by the Architect from manufacturer's complete color range. Accent colors not indicated or scheduled will be selected by the Architect from manufacturer's accent colors. Refer to drawings for patterns.

B. Sheet Vinyl (SV-2): Armstrong "Medintech", color not indicated or scheduled will be selected by the Architect from manufacturer's complete color range. Accent colors not indicated or scheduled will be selected by the Architect from manufacturer's accent colors. Refer to drawings for patterns.

C. Rubber Flooring (RF): Mondo America, Inc. "Sport Impact" or approved equal.

1. Material: Prefabricated rubber athletic flooring, calendered and vulcanized with a base of natural and synthetic rubbers, stabilizing agents and pigmentation.

2. Thickness: 3/8-inch.

3. Sheet Size: 6-feet wide x maximum lengths possible.

4. Texture: Sealskin.

5. Color: To be selected by the Architect.

2.02 INSTALLATION ACCESSORIES

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

B. Trowelable Underlayments and Patching Compounds: Latex-modified, portland-cement-based formulation provided or approved by floor covering manufacturer for applications indicated.

C. Adhesives: Provide type and brands of VOC-compliant, solvent free water-resistant adhesive as recommended by manufacturer of resilient tile flooring for accessories for conditions of installation. W.F. Taylor Company, Inc. 800.397.4583, "Envirotec 2095", XL Corporation 706.625.0025 "Lifespan 2000", Sinan Company 916.753.3104 "AURO Natural Adhesives".

D. Rod for Heat-Welding Seams: Product of floor covering manufacturer in color matching resilient flooring, as approved by the Architect.

PART 3 - EXECUTION

3.01 EXAMINATION

A. 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. Moisture vapor emission levels of slabs shall be in accordance with adhesive and flooring manufacturers' requirements. Testing of moisture vapor emission levels is specified in Section 09699.

2. Finishes of new concrete subfloors comply with tolerances and other requirements specified in Section 03300 for slabs receiving resilient flooring.

3. Subfloors are free of cracks, ridges, depressions, scale, and foreign deposits of any kind.

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

3.02 PREPARATION

A. Comply with manufacturer's installation specifications to prepare substrates indicated to receive resilient floor coverings.

B. Use trowelable leveling and patching compounds per floor covering manufacturer's direction 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 resilient floor coverings immediately before installation. Following cleaning, examine substrates to determine if there is visually any evidence of moisture, alkaline salts, carbonation, or dust.

E. Apply concrete slab primer, if recommended by flooring manufacturer, prior to application of adhesive. Apply according to manufacturer's directions.

3.03 INSTALLATION

A. Comply with resilient floor covering manufacturer's installation instructions and other requirements indicated that are applicable to each type of floor covering installation included in Project.

B. Lay out resilient floor coverings to comply with the following requirements:

1. Maintain uniformity of resilient floor covering direction.

2. Arrange for a minimum number of seams and place them in inconspicuous and low traffic areas, but in no case less than 6-inches away from parallel joints in flooring substrates. Seam locations shall be indicated on the shop drawings and be approved by the Architect.

3. Match edges of resilient floor coverings for color shading and pattern at seams.

4. Avoid cross seams.

C. Scribe, cut, and fit resilient floor coverings to butt tightly to vertical surfaces, permanent fixtures, and built-in furniture, including cabinets, pipes, outlets, edgings, thresholds, and nosings.

D. Extend resilient floor coverings into toe spaces, door reveals, closets, and similar openings.

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

F. Adhere resilient floor coverings to flooring substrates by method approved by floor covering manufacturer.

1. Produce completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, or other surface imperfections.

2. Comply with floor covering manufacturer's directions including those for trowel notching, adhesive mixing, and adhesive open and working times.

G. Heat-weld seams in resilient sheet floor coverings. Prepare, weld, and finish seams to produce a surface flush with adjoining sheets. Quality of welded seams shall match approved sample.

H. Integral Flash Cove Base: Where indicated, cove resilient sheet floor coverings up vertical surfaces to form integral base of height indicated over cove support strip with top edge butted against and covered by cap molding. Form inside and outside corners in accordance with manufacturer's instructions and to match approved sample.

I. Hand roll resilient 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.

3.04 CLEANING AND PROTECTION

A. Perform the following operations immediately after installing resilient floor coverings:

1. Remove visible adhesive and other surface blemishes using cleaner recommended by floor covering manufacturers.

2. Sweep or vacuum floor thoroughly.

3. Do not wash floor until after period recommended by floor covering manufacturer.

4. Damp-mop floor to remove black marks and soil.

B. 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 floor covering manufacturer.

1. Cover resilient floor coverings with undyed, untreated building paper until inspection for Substantial Completion.

2. Do not move heavy and sharp objects directly over resilient floor coverings. Place plywood or hardboard panels over floor coverings and under objects while they are being moved. Slide or roll objects over panels without moving panels.

C. Clean resilient flooring not more than 4-days prior to dates scheduled for inspections intended to establish date of Substantial Completion in each area of Project. Clean resilient floor coverings by method recommended by manufacturer.

3.05 WASTE MANAGEMENT

A. Separate waste in accordance with the Waste Management Plan and place in designated areas in the following categories for re-use:

1. Sheet materials larger than 2-sq. ft.

B. Linoleum and cork, if scheduled, are biodegradable and may be shredded and composted.

C. Close and seal tightly all partly used adhesive containers and store protected in well-ventilated fire-safe area at moderate temperature.

D. Place used adhesive tubes and containers in areas designated for hazardous materials.

END OF SECTION

SECTION 09676

RESINOUS FLOORING (ERC-1)

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for furnishing and installing resinous flooring, (ERC-1), consisting of a two-component epoxy primer; three-component troweled epoxy resin mortar base consisting of epoxy resin, curing agent and finely graded quartz silica aggregate; three-component epoxy resin undercoat; brightly colored broadcast vinyl flakes; and two-component clear epoxy sealer.

B. Related Sections:

1. Room mock-up is specified in Section 01430.
2. Curing, sealing and hardening concrete floors is specified in Section 03395.
3. Joint sealants are specified in Section 07920.
4. Water vapor emission control testing is specified in Section 09699.
5. Epoxy wall coating (ERC-2) is specified in Section 09965.

1.02 SUBMITTALS

A. Product Data: Furnish manufacturer's technical data, installation instructions, and general recommendations for each resinous flooring material required. Include certification indicating compliance of materials with requirements.

B. Samples: 12-inch square samples showing approximate applied thickness, color, texture, grit and special conditions. Make modifications as directed by the Architect until sample is approved.

C. Maintenance Instructions: Furnish manufacturer's printed instructions for maintenance of special flooring, including methods and frequency recommended for maintaining. Include precautions against materials and methods that may be detrimental to finishes and performance.

1.03 QUALITY ASSURANCE

A. Materials: Provide resinous floor covering materials produced by a single manufacturer capable of showing prior successful production and installation of specified materials for not less than 10-years.

B. Applicator: Resinous floor covering materials shall be installed by an applicator approved by the materials manufacturer, with a minimum of 5 Projects of similar size and complexity.

C. Pre-Installation Conference: Arrange a meeting not less than 30-days prior to starting work. Attending shall be Contractor, Architect, and manufacturer/installer.

1.04 JOB CONDITIONS

A. Proceed with work only after substrate construction and penetrating work have been completed.

B. Proceed with installation when conditions will permit work to proceed in accordance with manufacturer's recommendations.

C. Do not permit smoking, open flame, or spark producing equipment in areas of application.

D. Provide for continuous ventilation during installation, using as close to 100-percent outside air as possible.

E. Concrete substrate shall be cured for a minimum of 30-days.

1.04 WARRANTY

A. Warranty resinous flooring to be free from defects in materials and workmanship for a period of 3-years from Date of Substantial Completion. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contract under the Contract Documents.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

A. Selby "Selbatwede HD", Stonehard "HRI", modified to include vinyl flakes to match approved sample and mock-up or approved equal.

1. Resinous flooring and epoxy wall coatings (ERC-2) specified in Section 09965 shall be by the same manufacturer.

2.02 RESINOUS FLOORING

A. Material: Nominal 3/16-inch thick system comprised of a two-component, penetrating moisture tolerant epoxy primer, three-component troweled mortar base consisting of epoxy resin, curing agent and finely graded silica aggregate, three-component, free flowing epoxy formulation undercoat consisting of resin and curing agent, and vinyl flakes broadcast into the undercoat, and high-performance, UV resistant, two-component, clear-epoxy sealer. For the purposes of this system, use "Microflake" or 1/16-inch size decorative flake to match epoxy wall coating (ERC-2).

1. Physical Properties: Provide flooring system in which physical properties of topping including aggregate, when tested in accordance with standards or procedures specified, are as follows:

Compressive Strength, ASTM C579: 10,000-psi
Tensile Strength, ASTM C307: 2,000-psi
Flexural Strength, ASTM C580: 4,300-psi
Hardness, ASTM D2240, Shore D Durometer: 85-90
Bond Strength, ASTM D4541: >400-psi
Impact Resistance, ASTM D4226: >160-in.lbs.
Abrasion Resistance, ASTM D4060, Taber Abrader CS-17 Wheel: 0.06-gm. Max. weight loss

Coefficient of Friction, ASTM D2047: Dependent on texture
Flexural Modulus of Elasticity, ASTM C580: 2.0×10^6 psi.
Flammability, ASTM D635: Self extinguishing; extent of burning 0.25-inches max.
Thermal Coefficient of Linear Expansion, ASTM C531: 1.8×10^{-5} in/in deg. C.
Water Absorption, ASTM C413: 0.01-percent
Heat Resistance Limitation: 140-deg. F. for continuous exposure; 200-deg. F. for intermittent spills

B. Texture: Medium.

C. Color: As selected by Architect from manufacturer's standards.

D. Miscellaneous Materials:

1. Cove Base Termination Strip: Clear anodized aluminum or zinc strip.

2. Joint Sealant Materials: Type produced by resinous flooring manufacturer for type of service and joint condition indicated.

3. Epoxy Mortar for Control Joints: Selby "Selbaflex" epoxy joint filler.

PART 3 - EXECUTION

3.01 PREPARATION

A. Comply with manufacturer's instructions for preparation of substrates to receive resinous floor covering.

B. Clean substrate of dust, debris, and other substances detrimental to work by sandblasting, acid-etching or mechanical grinding as recommended by resinous flooring manufacturer. Remove resulting residue.

C. Prepare cracks and joints as recommended by resinous floor covering manufacturer.

1. Fill existing control joints with specified epoxy mortar.

D. Verify that moisture levels of concrete substrates comply with manufacturer's recommendations and requirements. Testing of concrete substrates for moisture content is specified in Section 09699.

E. Mask off adjoining surfaces not to receive resinous floor covering, and close off floor drains to prevent spillage and migration of materials outside application area.

3.02 INSTALLATION

A. Comply with manufacturer's instructions for installation of resinous floor covering.

B. Mix materials in accordance with manufacturer's instructions.

C. Apply base coat and screed and trowel to a tightly closed finish. Allow at least an 8-hour cure.

D. Lightly grind the base and apply undercoat using a steel squeegee, followed by rolling with a looped roller.

E. Immediately broadcast aggregate into the freshly applied undercoat. Allow at least 8-hours to cure.

F. Scrape and sweep the floor to remove loose aggregate particles, then vacuum.

G. Apply sealer with a rigid rubber squeegee and roll with a saturated medium nap roller.

H. Coved Base: Provide an integral cove base ant the joint between the floor and wall to a height of 5-inches unless otherwise indicated.

I. Finished Thickness: 3/16-inch.

J. Control Joints: Coordinate treatment of control joints with various steps in resinous flooring application, as required.

1. Locate control joints over control joints in the concrete slab.

2. Cut control joints thru the epoxy mortar coat over the control joint in the concrete slab and fill with specified epoxy joint filler.

3. Lay epoxy receiving coat and broadcast colored vinyl flakes.

4. Install grout and finish coats.

3.03 FIELD QUALITY CONTROL

A. The Owner obtains the right to invoke the following material testing procedure at any time, and any number of times during flooring application.

B. The Owner will engage service of an independent testing laboratory to sample materials being used on the Project. Samples of material will be taken, identified and sealed, and certified in presence of Contractor.

C. Testing laboratory will perform tests for any of characteristics specified, using applicable testing procedures.

D. If test results show materials being used do not comply with specified requirements, the Owner or Architect may direct Contractor to stop work, remove non-complying materials; pay for testing; reapply flooring materials to properly prepared surfaces which had previously been coated with unacceptable materials.

3.04 CLEANUP AND PROTECTION

A. Remove spilled and splattered materials immediately as work progresses.

B. Protect installation as required to ensure that work will be without damage or deterioration at time of final acceptance and after completion of other construction work.

C. Prohibit traffic on resinous floor covering for 48-hours after installation.

END OF SECTION

SECTION 09688

SHEET CARPET

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Section describes the requirements for installing sheet carpet and accessories.

B. Related Sections:

1. Curing, sealing, and hardening concrete floors is specified in Section 03395.

2. Resilient base and accessories are specified in Section 09652.

1.02 REFERENCE STANDARDS

A. Leadership in Energy and Environmental Design (LEED), www.usgbc.org/LEED (United States Green Building Council (USGBC).

1. LEED – NC v2.2 Reference Guide, first edition, dated December 2006.

1.03 SUBMITTALS

A. Refer to Section 01352 – LEED Requirements for LEED related submittal requirements.

B. Product Data: Manufacturer's product literature and installation instructions for each type of carpet and accessory required. Include data on physical characteristics, durability, resistance to facing and flame resistance characteristics. Include CRI consumer information label.

1. Recycled Content: Furnish product data on post-consumer recycled content and post-industrial recycled content as a percentage of the full product composite. All products shall have a minimum of 31-percent recycled content as measured by the total weight of each product. All products shall contain a minimum 7-percent post consumer recycled content.

2. All recycled content percentages are to be third party verified by sources such as SCS and full documentation to be provided to the owner, no exceptions. All recycled content products must be provided at no additional cost and not as an "as available" basis, thereby allowing virgin materials to be used.

3. Regional Materials: Furnish product data or letter stating the location (closest city, state) where product was manufactured (final processing or assembly) and, if available, the location where raw materials were harvested, extracted or recovered (mine, quarry, plantation, forest, recycling recovery center, etc.).

4. Furnish manufacturer's information indicating that the carpet materials meet or exceed the Carpet and Rug Institute's "Green Label" Indoor Air Quality Test Program.

5. Furnish manufacturer's information indicating that the carpet meets the State of California's Gold or Platinum certified standards.

C. Layout and Seaming Diagrams: Show layout and seaming diagrams indicating carpet direction, types of edge strips, columns, doorways, enclosing walls or partitions, built-in cabinets, and locations of cutouts. Include installation details at special conditions.

D. Samples for Verification Purposes: 18-inch x 18-inch samples of each carpet and 12-inch long samples of each type of exposed edge stripping.

1.04 QUALITY ASSURANCE

A. Carpet Surface Burning Characteristics: Provide carpet identical to that tested for the following fire performance characteristics, per test method specified below, by UL or other testing and inspecting organizations acceptable to authorities having jurisdiction. Identify carpet with appropriate markings of applicable testing and inspecting organization.

1. Test Method: DOC FF 1-70, Pass.

2. Test Method: ASTM E84.

a. Flame Spread: 25 or less.

b. Smoke Developed: 450 or less.

B. Installer's Qualifications: Minimum 2-years experience in installation of commercial carpeting of type, quantity and installation methods similar to work of this Section.

C. All materials shall comply with the requirements of local Air Quality Management District (AQMD) governing the emission of Volatile Organic Compounds.

1.05 ENVIRONMENTAL QUALITY ASSURANCE

A. Indoor Air Quality: Carpet shall meet or exceed the minimum standards contained in the Carpet and Rug Industry (CRI) Institute consumer information label.

B. Applicable LEED Credits – Refer to Section 01352:

1. Credit MRc4 – Recycled Content.

2. Credit EQc4.1 – Adhesives and Sealants.

3. Credit EQc4.3 – Carpet.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver carpeting materials in original factory protective wrapping and containers, labeled with identification of manufacturer, brand name, quality or grade, fire hazard classification, and lot number.

B. Store inside, in well-ventilated area, protected from weather, moisture, soiling, extreme temperatures, and humidity.

1.07 COORDINATION

A. Prior to construction of each type of new substrate which is to support carpet, furnish information on substrate texture and condition required for each type of carpet.

B. Painting work in areas to be carpeted shall be completed prior to installation of carpet.

C. Carpet materials shall be unpackaged, inspected, and rolled out backing side out in a well ventilated area off site for a minimum of 72-hours prior to delivery to the Project site.

1.08 PROJECT CONDITIONS

A. Substrate Conditions: Verify that concrete slab moisture levels comply with manufacturer's requirements.

B. Substrate Conditions: pH of 9 or less when substrate wetted with potable water and pHydrion paper applied.

C. Use adhesives in strict accordance with manufacturer's recommendations and ventilate area with maximum outside air for a period of not less than 48-hours after completion.

D. Do not store carpet near products that can off gas harmful substances.

E. Check substrates to ensure that no dusting will occur through installed carpet. Apply sealer on porous concrete surfaces where required to prevent dusting.

F. Vacuum-clean surfaces immediately before installation.

1.09 INDOOR AIR QUALITY

A. Pre-ventilate carpet. Unroll and air out carpet in a well ventilated, uninhabited space for a minimum of several hours.

B. Provide maximum ventilation during installation.

C. Isolate area of installation from rest of building.

D. Clean new carpet thoroughly with a high-efficiency particulate air (HEPA) filtration vacuum.

1.10 WARRANTY

A. Warrant the surface pile against abrasive wear of more than 10-percent within 10-years for carpet as properly installed and maintained. Misuse, damage, or improper cleaning methods shall not apply.

B. Warrant installation against stretching, wrinkling, opening of joints, and other areas of poor materials and workmanship for a period of 2-years after final acceptance of Project. Provide materials and labor necessary for repair or replacement, without additional cost to the Owner.

C. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

1.11 MAINTENANCE

A. Maintenance Instructions: Furnish manufacturer's printed instructions for maintenance of installed carpet, including methods and frequency recommended for maintaining. Include precautions against materials and methods detrimental to finishes and performance.

B. Replacement Materials: Prior to installation of carpet, deliver in full roll widths not less than 5-percent of each type, color, and pattern of carpeting, exclusive of material required to properly complete installation. Furnish accessory components as required. Replacement materials shall be from the same production run as materials installed. Package with protective covering, identified with appropriate labels. Installation scraps and trimmed pieces will not be acceptable.

PART 2 - PRODUCTS

2.01 CARPET

A. Approved Manufacturer: Lees "Lineage" or approved equal matching appearance and quality of selected pattern and color.

B. Construction: Dense tufted textured loop.

C. Backing shall meet the minimum State of California Gold or Platinum certified standards; Lees "Unibond RE" or approved equal.

D. Face Weight: 28-ounces.

E. Total Weight: 78-ounces.

F. Pile Height: 0.187-inch average.

G. Gauge: 1/8-inch.

H. Anti-bacterial and anti-microbial treated. Anti-microbial activity after treatment not less than 2-mm halo of inhibition for gram-positive bacteria; not less than 1-mm halo of inhibition for gram-negative bacteria; no fungal growth; per AATCC-174.

I. Patterns and Colors: As selected by the Architect.

2.02 ACCESSORY MATERIALS

A. Seam Sealants: Maximum VOC level not to exceed 50 g/l. The use of seam sealants containing 1,1,1-trichloroethane or toluene is not allowed.

B. Carpet Adhesive: Water-resistant, non-staining type as recommended by carpet manufacturer, complying with flammability requirements for installed carpet. Maximum VOC levels shall not exceed 50 g/l.

C. Miscellaneous: Provide tape, thread, and other items necessary for installation.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clear away debris and scrape up cementitious deposits from concrete surfaces to receive carpet; apply sealer to prevent dusting.

3.02 INSTALLATION, GENERAL

A. Comply with manufacturer's recommendations for seam locations and direction of carpet; maintain uniformity of carpet direction and lay of pile.

B. At doorways, center seams under door in closed position; do not place seams perpendicular to door frame, in direction of traffic through doorway.

C. Extend carpet under removable flanges of furnishings and into alcoves and closets of each space.

D. Provide cutouts where required, and bind cut edges where not concealed by protective edge guards or overlapping flanges.

3.03 GLUE-DOWN INSTALLATION

A. Fit sections of carpet into each space prior to application of adhesive. Trim edges and butt cuts with seaming cement.

B. Apply adhesive uniformly to substrate in accordance with manufacturer's instructions.

C. Butt carpet edges tightly together to form seams without gaps.

D. Roll lightly to eliminate air pockets and ensure uniform bond.

3.04 CLEANING

A. Remove adhesive from carpet surface with manufacturer's recommended cleaning agent.

B. Remove and dispose of debris and unusable scraps.

C. Vacuum using commercial machine with face-beater element. Remove spots and replace carpet where spots cannot be removed. Remove protruding face yarn with sharp scissors.

3.05 PROTECTION

A. Provide protective methods and materials needed to ensure that carpeting will be without deterioration or damage at time of Substantial Completion.

3.06 WASTE MANAGEMENT

A. All scraps of unused material shall be reclaimed and recycled by the carpet manufacturer. Include a detailed confirmation of the material received by the manufacturer and documentation that these materials have been recycled into new flooring materials. No incineration of reclaimed materials is acceptable.

END OF SECTION

SECTION 09699

WATER VAPOR EMISSION CONTROL SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this Section includes retaining and paying for an independent Testing Laboratory to perform moisture vapor emission testing on new concrete slabs to receive carpet, resilient flooring, and resinous flooring (ERC-1), and for applying a vapor emission control system treatment when testing reveals vapor emission levels exceeding specified maximums.

B. Related Sections:

1. Cast-in-place concrete is specified in Section 03300.
2. Resilient flooring is specified in Section 09654.
3. Resinous flooring (ERC-1) is specified in Section 09676.
4. Sheet carpet is specified in Section 09688.

1.02 SUBMITTALS

A. Product Data: Furnish product data on treatment materials proposed for use, test reports, and application instructions.

B. Test Diagram: Prepare a moisture report of each test area. Include name of company performing the test; types of testing instruments used; floor plan of building with each test location identified; starting date, time, and beginning weight; estimate of building temperature; stopping date, time, and ending weight; and computed pounds of emission, including equations.

1.03 QUALITY ASSURANCE

A. Installer: Manufacturer's trained personnel or factory-trained authorized installer. Installer shall have a minimum of 5-years documented experience in the installation of concrete vapor emission control systems.

B. Manufacturer: Minimum 5-years experience producing moisture vapor control emission products.

1.04 PROJECT CONDITIONS

A. Apply water vapor control system treatment materials within a temperature range of 65-deg. F. and 100-deg. F.

1.05 WARRANTY

A. Warranty failure of finish flooring system due to concrete water vapor emission to the installed system for a period of 10-years from date of Substantial Completion. Include replacement of finish flooring material, and re-application of adhesive, vapor emission control system. This warranty shall be in addition to and not a limitation of other rights the Owner may have against the Contractor under the Contract Documents.

PART 2 - PRODUCTS

2.01 APPROVED MANUFACTURERS

A. Advanced Moisture Control, Inc., Floor Seal Technology, Inc., Koster, Synthetics Intl. or approved equal.

2.02 MATERIALS

A. Concrete Moisture Mold Alkalinity Barrier Properties:

1. Moisture Vapor: Unlimited 30-lbs., no upper limits
2. Alkalinity: Unlimited (14pH) control, no damage to barrier
3. Concrete Adhesion: Inner matrix chemical & mechanical bond
4. ASTM F1869 Post-Installation Testing Results: 2.0 (±0.50)
5. ASTM D1308 Acid & Alkali Testing: Pass, no effect on material
6. ASTM D4541 Adhesion Strength: 500 PSI (100% cohesive failure)
7. ASTM C1028 Coefficient of Friction: Dry 0.50
8. Viscosity: 1,700 cps (Self-leveling)
9. Tensile Strength: 6,000- to 8,000-psi
10. Compressive Yield: 12,000-psi
11. Ultimate Flexural: 10,000-psi
12. Fire Resistance:
    a. Smoke Development: None (0)
    b. Flame Spread: Nil (5)
    c. Fuel Contribution: None (0)

B. Testing Equipment: Manufacturer's standard.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Vapor Emission Testing:

1. Perform pre-installation testing of the concrete slab by a calcium chloride test prior to the application of specified water vapor emission control system treatment. Testing shall be performed by a qualified testing personnel and Testing Laboratory.
2. Perform three tests for the first 1,000-sq. ft. of flooring and one additional test for each additional 1,000-sq. ft. of flooring. Conduct around the perimeters of the room, at columns and where moisture may be evident.
    a. Moisture: Perform ASTM F1869 anhydrous calcium chloride testing on clean concrete slabs; free of curing, sealing, adhesive residue, water and surface contaminates in a area 20-inches by 20-inches 24-hours before test kits are installed.
    b. Alkalinity: Perform ASTM F710 alkalinity testing during retrieval of moisture tests, directly inside dome area by placing several drops of manufacture provided solution to concrete surface. Wait 60-seconds and apply digital LCD pH meter. Record results to the nearest hundredth on final test report.

c. Temperature, Humidity and Surface Thermometer: Document temperature, humidity and surface temperature at installation and retrieval of moisture kits on final testing report. Note dew point temperature for control barrier installations.

3. Tests shall determine the change in weight of moisture-absorbing anhydrous calcium chloride and the results shall represent the amount of moisture transmitting out of the concrete slab area. The value shall be expressed in pounds and shall be equivalent to the weight of the water that is emitted from a 1,000-sq. ft. concrete slab area in a 24-hour period of time.

B. Unless more restrictive emission levels are required by finish flooring manufacturer, if calcium chloride testing reveals water vapor emission levels greater than 3-pounds per 1,000-sq. ft. for resilient flooring and resinous flooring (ERC-1) and 5-pounds per 1,000-sq. ft. for adhesively-applied carpet, apply sealer in accordance with manufacturer's instructions.

3.02 SURFACE PREPARATION

A. Concrete surfaces to be tested shall be clean and free of residue, debris, and sealing compounds.

B. Clean and prepare substrate surfaces to receive floor sealer in accordance with manufacturer's recommendations.

3.03 APPLICATION OF VAPOR EMISSION CONTROL SYSTEM

A. Apply floor sealer by squeegee, spray, and/or roller method to saturate the concrete surface. Apply materials in accordance with manufacturer's instructions.

B. Coverage rates shall be in accordance with manufacturer's recommendations based on concrete density and porosity.

C. Allow materials to penetrate and cure, and re-test for vapor emission levels.

D. Unless more restrictive emission levels are required by finish flooring manufacturers, do not apply resilient flooring or resinous flooring (ERC-1) until vapor emission has been reduced to 3-lbs./1,000-sq. ft./24-hrs or less and adhesively-applied carpet until the vapor emission has been reduced to 5-lbs./1,000-sq. ft./24-hrs. or less.

END OF SECTION