

## SECTION 096516.13

## LINOLEUM FLOORING

## PART 1 - GENERAL

## 1.1 SUMMARY

- A. This section specifies the installation of linoleum sheet flooring with backing.

## 1.2 RELATED WORK

- A. Color, Pattern and Texture: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Base trim: Section 06 20 00, FINISH CARPENTRY.

## 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each type of floor covering. Include floor covering layouts, locations of seams, edges, columns, doorways, enclosing partitions, built-in furniture, cabinets, and cutouts.
- C. Samples: In manufacturer's standard size, but not less than [**6-by-9-inch (152-by-230-mm)**] <Insert size> sections of each color and pattern of floor covering required.

## 1.4 CLOSEOUT SUBMITTALS

- A. Maintenance data.

## 1.5 QUALITY ASSURANCE

- A. Fire-Test-Response Characteristics: As determined by testing identical products according to ASTM E 648 or NFPA 253 by a qualified testing agency.
  - 1. Critical Radiant Flux Classification: Class I, not less than 0.45 W/sq. cm.

## 1.6 PROJECT CONDITIONS

- A. Maintain ambient temperatures within range recommended by manufacturer in spaces to receive floor coverings.

- B. Until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer.
- C. Close spaces to traffic during floor covering installation.
- D. Close spaces to traffic for 72 hours after floor covering installation.
- E. Install floor coverings after other finishing operations, including painting, have been completed.

1.7 DELIVERY, STORAGE AND HANDLING

1.8 WARRANTY

- A. Submit written warranty accordance with FAR clause 52.246-21, Warranty of Construction Requirements except that warranty period shall be extended to include two (2) years.

**PART 2 - PRODUCTS**

2.1 MANUFACTURERS

- A. Products: The following product is the basis of design:
  - 1. Armstrong Sheet Linoleum

2.2 PERFORMANCE REQUIREMENTS

- A. Low-Emitting Materials: Flooring system shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

2.3 LINOLEUM FLOOR COVERING LS-1

- A. Sheet Flooring: ASTM F 2034, Type I, linoleum sheet with backing.
  - 1. Roll Size: In manufacturer's standard length by not less than 78 inches (1980 mm) wide.
- B. Colors and Patterns: Here Kitty LP352

2.4 INSTALLATION MATERIALS

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

- B. Adhesives: Water-resistant type recommended by manufacturer to suit products and substrate conditions indicated.
1. Adhesives shall have a VOC content of not more than 50 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  2. Adhesives shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."
- C. Floor Polish: Provide protective liquid floor polish products as recommended by manufacturer.

### **PART 3 - EXECUTION**

#### 3.1 PREPARATION

- A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of floor coverings.
- B. Concrete Substrates: Prepare according to ASTM F 710.
1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
  2. Remove substrate coatings and other substances that are incompatible with floor covering adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
  3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
  4. Moisture Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrates pass testing.
    - a. Perform anhydrous calcium chloride test, ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. in 24 hours.
    - b. Perform relative humidity test using in situ probes, ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level measurement.
- C. Wood Subfloor.
1. Preparation shall include the removal of existing resilient floor covering and adhesive. Do not use solvents to remove adhesive. Coordinate with Asbestos Abatement section if asbestos abatement procedures will be involved.
  2. Repair and prepare existing wood floor, subfloor to receive sheet linoleum' manufacturer's underlayment. Resecure loose boards and subfloor; replace subfloor where failed,
- D. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound and remove bumps and ridges to produce a uniform and smooth substrate.

- E. Do not install floor coverings until they are same temperature as space where they are to be installed.
  - 1. Move floor coverings and installation materials into spaces where they will be installed at least 72 hours in advance of installation.
- F. Sweep and vacuum clean substrates to be covered by floor coverings immediately before installation.

### 3.2 INSTALLATION, GENERAL

- A. Install work in strict compliance with manufacturer's written instructions and approved layout drawings for installing floor coverings.
- B. Scribe and cut floor coverings to butt neatly and tightly to vertical surfaces, permanent fixtures, and built-in furniture including cabinets, pipes, outlets, edgings, thresholds, and nosings.
- C. Extend floor coverings into toe spaces, door reveals, closets, and similar openings.
- D. Maintain reference markers, holes, or openings that are in place or marked for future cutting by repeating on floor coverings as marked on subfloor. Use chalk or other nonpermanent marking device.
- E. Adhere floor coverings to substrates using a full spread of adhesive applied to substrate to produce a completed installation without open cracks, voids, raising and puckering at joints, telegraphing of adhesive spreader marks, and other surface imperfections.

### 3.3 LINOLEUM SHEET FLOORING INSTALLATION

- A. Unroll sheet floorings and allow them to stabilize before cutting and fitting.
- B. Lay out sheet floorings as follows:
  - 1. Maintain uniformity of floor covering direction.
  - 2. Minimize number of seams; place seams in inconspicuous and low-traffic areas, at least 6 inches (152 mm) away from parallel joints in floor covering substrates.
  - 3. Match edges of floor coverings for color shading at seams.
  - 4. Avoid cross seams.
  - 5. Eliminate deformations that result from hanging method used during drying process (stove bar marks).

### 3.4 CLEANING AND PROTECTION

- A. Keep traffic off sheet flooring for 24 hours after installation.

- B. Upon completion, VA shall inspect sheet flooring to ascertain that work was done in accordance with manufacturer's printed instructions.
- C. Comply with manufacturer's written instructions for cleaning and protection of floor coverings.
- D. Floor Polish: Remove soil, visible adhesive, and surface blemishes from floor covering before applying liquid floor polish. Comply with manufacturer's recommendations.
  - 1. Apply two coat(s).
- E. After allowing drying room film (yellow film caused by linseed oil oxidation) to disappear, cover floor coverings until Substantial Completion.
- F. Where protective materials are removed and immediately prior to final acceptance, repair any damage, re-clean sheet flooring, lightly re-apply polish and buff floor.

END OF SECTION