SilverKnight
RESILIENT SHEET FLOORING

PART I: GENERAL

Specifier Note: Revise paragraphs below to suit required project.

1.1 RELATED DOCUMENTS

A. Drawings, Bidding requirements and General conditions of the Contract and portions of Division 1 of this project manual apply to the work of this section.

1.2 WORK INCLUDED

A. Specified Solutions Inc. (864) 414-3675 supplied Grabo Silver Knight resilient sheet flooring.
B. Accessories.

1.3 Quality Assurance and Regulatory Requirements

A. Select an installer who is competent in the installation of Grabo resilient sheet flooring using heat-welded seams or chemically welded seams.

B. Provide each type of adhesive, primer, sealants and leveling compounds recommended by Grabo.

C. Provide flooring material to meet the following fire test performance criteria as tested by a recognized independent testing laboratory:

a. ASTM E 648-03 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I.

b. ASTM E 662-03 (Smoke Generation) Maximum Specific Optical Density of 450 or less.

1.4 RELATED WORK

A. Other Division 9 sections for floor finishes related to this section but not the work of this section.
B. Division 3 Concrete: not the work of this section.
C. Division 6 Wood and Plastics: not the work of this section.
D. Resilient Flooring: Section 09650
E. Division 7 Thermal and Moisture Protection: not the work of this section.

1.5 SUBMITTALS

A. Submit shop drawings, seaming plan and coving details including reducers and/or caps required.
B. Manufactures installation and maintenance instructions.
   1. Manufacturer's technical data for each type of resilient flooring and accessory.
   2. Manufacturer's standard samples showing required color of actual selections of resilient sheet flooring and applicable accessories.
   3. Moisture Test Results using a Calcium Chloride Moisture Test to be submitted to the Flooring Distributor prior to delivery and installation of resilient sheet flooring. A reading of Five (5) pounds per 1000 square feet per 24 hours or less is an acceptable reading.
   4. Concrete pH must be under 9. Perform test and submit results to Architect and General Contractor.
   5. If required, submit certification that the flooring has been tested by an independent laboratory and complies with the required fire tests.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials to project site in manufacturer's original, unopened containers with labels indicating brand names, colors and patterns, and quality designations legible and intact.
B. Store and protect materials in a clean, dry enclosed space and protect from the weather and from extremes of heat and cold in accordance with manufacturer's recommendations. SilverKnight rolls

should be stored vertically. Protect adhesives from freezing. Store adhesive, flooring and accessories in the space where they will be installed for at least 72 hours prior to installation.

1.7 ENVIRONMENTAL CONDITIONS

Verify that Vapor Barrier or equal has been installed under work of Section 03300. Concrete contractor shall not create holes in membrane. Repair holes as they appear.

A. Maintain minimum temperature in the spaces to receive the flooring and accessories of 70°F (20C) and maximum temperature of 85°F (29C) for at least 72 hours before and during installation and for one week after installation, including all weekend hours using permanent HVAC system. Permanent heat must be used. Space heaters are not acceptable. Subsequently, maintain minimum temperature of 70°F and a maximum temperature of 85°F in areas where work is completed.
B. The subfloor should be vacuumed, debris free and dry immediately prior to beginning installation.
C. The flooring material sheets should be unrolled and laid out flat for a period of 24-48 hours prior to installation to allow the material to completely relax and acclimate on the job site.
D. Install resilient flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during installation. No foot traffic for 24 hours after installation and no heavy fixtures or rolling loads for 72 hours after installation.
E. Do not install flooring over concrete slabs until they have been cured and are sufficiently dry to achieve bond with adhesive as determined by the adhesive manufacturer's recommended bond and moisture test. Concrete must be free of curing compounds or adhesives and have compressive strength of 3500 psi or greater.
F. Where solvent based adhesives are used, provide safety, spark-proof fans when natural ventilation is not adequate.
G. Subflooring must be dry.
H. Floor covering should not be installed over expansion joints. Expansion joint covers compatible with floor covering should be used.
I. Do not install floor covering over existing VCT or VAT without using approved underlayment to hide tile seams.
J. Inspect substrate for any contamination, such as oil drippings, cutback adhesives, etc. Encapsulate contamination with an encapsulator before progressing with the installation of the floor covering. The use of solvent-based adhesive removers is NOT recommended. Mapei's Plan/Patch Plus and Ardex 15 are acceptable coverings. Self-leveling underlayment's can have very high moisture contents and require longer curing times, some up to 10 days. Check with a moisture meter before starting installation.

1.8 EXTRA MATERIALS

A. Furnish at least one percent (2%) for each color installed for attic stock.

1.9 WARRANTY

A. Silver Knight Fifteen (15) year limited warranty commencing on date of purchase.

PART II: PRODUCTS

Specifier note: Retain article below for proprietary method specification. Add product attributes performance characteristics, material standards and descriptions as applicable. Use of such phrases as "or equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.1 Resilient Sheet Vinyl Flooring

A. Substitutions: No substitutions permitted.

2.2 Provide Grabo Silver Knight Sheet Vinyl flooring supplied by
Specified Solutions Inc (864)414-3675 / info@specifiedsolutionsinc.com.
Material Description and Physical Characteristics:
Silver Knight Collection

1. Classification: 28 mill, Type I, Grade 1, embossed, TECH commercial grade wear layer.
2. Size: 6'6" x 66'
3. Nominal Thickness: 0.079" (2mm)
4. Backing: 2-ply fused PVC backing system with fiberglass inner layer.
5. Bacteria elimination properties using silver ion technology

6. Test data:
   a. Critical Radiant Flux (Flammability): Meets or exceeds ASTM D648-03, Class I
   b. Smoke Generation: ASTM-662-03 Passes Class 1.
   c. Static Load Limit: ASTM F970, 800 lbs applied
   d. Chemical Resistance: Complies with ASTM F925-02. Pass. No change
   e. Slip Resistance James Test: ASTM2047-99 in compliance with ADA requirements. Dry >0.8, Wet >0.8
   f. Wear Resistance: ASTM 3884-01 >100,000 cycles, 1000 g. load, S-33 (Taber Abrasion pattern NOT worn out)
   g. Anti-Bacterial: ISO 846:1999 Silver Knight Pass
   h. Dimensional Stability: EN 434 <0.20%
   i. Light Fastness: EN 20105 B02 6
   j. 15 year limited commercial warranty

2.6 **ACCESSORIES**

A. Adhesives: TD2 Adhesive as recommended by flooring manufacturer to suit material and substrate conditions.
B. Concrete Slab Primer: Non-staining type as recommended by flooring manufacturer.
C. Patching, Leveling, Underlayment: Mastic Latex type equivalent to Camps latex underlayment.
D. Welding Rods: Manufacturer's standard or equal; color as selected.
E. Chemical Weld: Manufacturer's standard or equal.
F. Terminating reducers: Manufacturer's standard; color as selected.

PART III: EXECUTION

3.1 INSPECTION

A. Inspect subfloor surfaces prior to installation to determine that they are dry, clean, smooth, free from cracks, holes, ridges, and other defects that might prevent adhesion bond or impair appearance and durability of the flooring material.
B. Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.
C. 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 compound. Do not use curing compounds on concrete subfloors.
D. Perform moisture tests in accordance with ASTM test methods F 1869 Calcium Chloride Test and/or ASTM F 2170 *in situ* Relative Humidity Test. When measured in accordance with F1869, the moisture emission rate should not exceed *5 pounds per 24 hours per 1000 square feet*. The acceptable test result when using test method F 2170 should not exceed *seventy five percent* (75%) AND pH readings should not exceed *9.0.* All test results should be documented and retained.
E Submit moisture and concrete pH tests to Flooring Distributor before ordering flooring product.
F. Perform bond test at the rate of one per 50 square feet.
G. Do not allow resilient sheet flooring work to proceed until subfloor surfaces are satisfactory. Indicate adverse conditions of any type by letter to Architect and Flooring Distributor.

3.2 PREPARATION

A. Smooth concrete surfaces. Sand or grind subfloors to remove mortar, paint, and other surface irregularities. Fill low spots, control or construction joints and other defects.
B. Where leveling is required, apply latex type underlayment in two or more applications. Apply compound in accordance with manufacturer's printed instructions.
C. Remove all debris, sand, and other materials which result in lack of adhesion or telegraphing.

3.3 GENERAL INSTALLATION PROCEDURES

A. Install sheet flooring and accessories in strict accordance with the latest edition of Grabo Installation Instructions". Install flooring wall to wall before installation of floor set cabinets, casework, furniture, equipment, movable partitions, etc. Extend resilient sheet flooring into toe spaces, door reveals, and into closets and similar openings.
B. Scribe, cut and fit or flash cove to permanent fixtures, walls, pipes, built-in furniture and cabinets, outlets and permanent columns, and partitions. Floor shall be tight to door bucks.
C. 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 non-staining marking device.
D. Tightly cement resilient sheet to sub base without open cracks, voids, raising and puckering at seams, telegraphing of adhesive spreader marks, or other surface imperfections. Roll with a 100-pound roller in the field areas. Hand roll resilient sheet flooring at perimeter and the seams to assure adhesion.
E. Install flooring with adhesives, tools and procedures in strict accordance with the manufacturer's written instructions.
F. Lay flooring to provide a minimum of seams. Avoid cross seams, strips and filler pieces. Match edges for color and pattern matching.
G. Use a 2-part urethane adhesive, recommended by the Flooring Distributor, under any LDR's, extremely heavy hospital beds, or border pieces.

3.4 RESILIENT SHEET FLOORING INSTALLATION PROCEDURES

A. Roll out resilient sheet flooring material with top surface up. Trim off all damage edges. Allow material to relax for twenty four (24) hours.
B. Trim off all damaged ends
C. Straight edge and under scribe all side and end seams.
D. Fold back sheet half-way. Spread adhesive with replaceable blade type notched trowel. Fold sheet into adhesive, allowing for a pattern match.
E. Roll sheet with 100 pound roller. Hand roll all seams.
F. Seams
    1. Heat weld all seams
        a. Route material to accept heat weld roll
        b. Melt matching welding thread into grooves using heat weld gun.
        c. Use guide plate on spatula knife when trimming the weld rod the first time. Wait a minimum of one hour before doing final trim using a Stanley No. 5005 tool.
    2. Chemical weld all seams using Mannington's MLG33 low gloss commercial seam welding.

3.5 FINISHING AND CLEANING

A. Perform the following initial cleaning operations 24 hours after completion of resilient flooring.
    1. Sweep or vacuum floor thoroughly to remove any loose dirt, dust and other foreign materials.
    2. Scrub floor surface using a buffing machine with a 450 or less RPM maximum speed along with a solution of lukewarm water and mild cleaner. After scrubbing is complete, wet-vac surface with heavy duty commercial wet vacuum. Rise floor thoroughly with clean lukewarm water and again wet-vac surface to remove all excess water.
    3. Do not scrub floor with steel wool pads, wire brushes, aggressive floor cleaners or cleansers. These products can cause severe scratching and damage to the floor surface.

3.6 PROTECTION

A. Protect resilient sheet flooring against damage during construction period to comply with resilient sheet flooring manufacturer's directions. Keep furniture off the floor for 24 hours. Do not allow rolling carts to be used on the floor for at least 72 hours.