



Architectural Specifications

RESILIENT SHEET FLOORING Evolution, EconoSafe, SilverKnight, SafeDecor

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. TD2 Floors Evolution, EconoSafe, Silver Knight, SafeDecor resilient sheet flooring.
- B. Accessories.

1.3 Quality Assurance and Regulatory Requirements

- A. Select an installer who is competent in the installation of TD2 resilient sheet flooring using heat-welded seams or chemically welded seams.
- B. Provide each type of adhesive, primer, sealants, and leveling compounds recommended by TD2.
- 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. Cast-in-place Concrete: Section 03300.
- B. Resilient Flooring: Section 09650.

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 and MSDS sheets 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 per ASTM F-1869 to be submitted to the General Contractor prior to delivery and installation of resilient sheet flooring. A reading of less than Five (5) pounds per 1,000 square feet per 24 hours or less is an acceptable reading. The acceptable test method F2-2170 should not exceed eighty-five percent (85% rh) and pH readings should not exceed 9.0.

4. 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. TD2 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

- A. Maintain minimum temperature in the spaces to receive the flooring and accessories of 70°F (21°C) and maximum temperature of 85°F (29°C) 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 (21°C) and a maximum temperature of 85°F (29°C) in areas where work is completed.
- B. The subfloor should be vacuumed, debris free, flat and dry immediately prior to beginning installation.
- C. The flooring material sheets must be unrolled and laid out flat for a period of 24-48 hours prior to installation to allow the material to completely relax. Adhesive must also be acclimated to the job site for 72 hours prior to installation.
- 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, adhesives, paint or any foreign substance which would interfere with a good firm bond and have compressive strength of 3,500 psi or greater.
- F. Subfloor must be dry.
- G. Floor covering should not be installed over expansion joints. Expansion joint covers compatible with floor covering should be used.
- H. Do not install floor covering over existing VCT or VAT without using approved underlayment to hide tile seams.
- I. 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 Plani 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 two percent (2%) for each color installed for attic stock.

1.9 WARRANTY

- A. EconoSafe Seven (7) year, Evolution Ten (10) year, Silver Knight Fifteen (15) year, Silver Knight Fifteen (15) year and SafeDecor Twenty five (25) year limited warranty commencing on date of purchase.

PART II: PRODUCTS

Specifier note: Retain article below for proprietary method specification. 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.

2.1.1 Resilient Sheet Vinyl Flooring (eliminate the products you are not using on the project and insert pattern name and numbers for appropriate areas)

A. Substitutions: No substitutions permitted.

2.2 Provide EVOLUTION Sheet Vinyl flooring supplied by TD2 Floors Distributor:

Distributor Name: _____

Contact Name: _____

Contact Phone: _____

Material Description:

Pattern name: _____

Pattern color: _____

Pattern number _____

Areas used: _____

Physical Characteristics:

Evolution Collection

1. Classification: 28 mill, Type I, Grade 1, embossed, clear, semi-rigid PVC commercial grade wear layer over print design.
2. Size: 6'6" x 66' (2m x 20m) or 9'9" x 66' (3m x 20m) or 13'1" x 66' (4m x 20m)
3. Nominal Thickness: 0.079" (2mm)
4. Backing: coating technology PVC backing system with fiberglass inner layer.
5. 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 >0.7, Wet >0.8
 - f. Wear Resistance: ASTM 3884-01 >50,000 cycles, 1000 g. load, S-33 Taber Abrasion Test
 - g. Anti-Bacterial: ISO 846:1999 GraboSan Pass
 - h. Dimensional Stability: EN 434 <0.20%
 - i. Light Fastness: EN 20105 B02 - 6
 - j. Electrostatic Propensity: AAT 134-06 <2kv
 - k. 10 year limited commercial warranty

2.3 Provide ECONOSAFE Sheet Vinyl flooring supplied by TD2 Floors Distributor:

Distributor Name: _____

Contact Name: _____

Contact Phone: _____

Material Description:

Pattern name: _____

Pattern color: _____

Pattern number _____

Areas used: _____

Physical Characteristics:**EconoSafe Collection**

1. Classification: 28 mill, Type I, Grade 1, embossed, Cross Linked Polymer commercial grade wear layer design with embedded inorganic particles.
2. Size: 6'6" x 66'
3. Nominal Thickness: 0.079" (2mm)
4. Backing: coating technology PVC backing system with fiberglass inner layer.
5. 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 >0.9, Wet >0.8
 - f. Wear Resistance: ASTM 3884-01 >1,000 cycles, 1,000 g. load, S-33 Taber Abrasion Test
 - g. Anti-Bacterial: ISO 846:1999 GraboSan Pass
 - h. Dimensional Stability: EN 434 <0.20%
 - i. Light Fastness: EN 20105 B02 - 6
 - j. 7 year limited commercial warranty

2.4 Provide Silver Knight Sheet Vinyl flooring supplied by TD2 Floors Distributor:

Distributor Name: _____

Contact Name: _____

Contact Phone: _____

Material Description:

Pattern name: _____

Pattern color: _____

Pattern number _____

Areas used: _____

Physical Characteristics:**Silver Knight Collection**

1. Classification: 28 mill, Type I, Grade 1, embossed, TECH (Technologically Explored Ceramic Hard surface) commercial grade wear layer.
2. Size: 6'6" x 66'
3. Nominal Thickness: 0.079" (2mm)
4. Backing: 2-ply coating technology PVC backing system with fiberglass inner layer.

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5. 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, 1,000 g. load, S-33 Taber Abrasion Test
 - g. Anti-Bacterial: ISO 846:1999 GraboSan Pass
 - h. Dimensional Stability: EN 434 <0.20%
 - i. Light Fastness: EN 20105 B02 - 6
 - j. 15 year limited commercial warranty

2.5 Provide Silver Knight Sheet Vinyl flooring supplied by TD2 Floors Distributor:

Distributor Name: _____

Contact Name: _____

Contact Phone: _____

Material Description:

Pattern name: _____

Pattern color: _____

Pattern number _____

Areas used: _____

Physical Characteristics:

Silver Knight Collection

1. Classification: 28 mill, Type I, Grade 1, embossed, TECH (Technologically Explored Ceramic Hard surface) commercial grade wear layer with Photocatalytic NanoSilver and Nano Titanium Dioxide for double defense line against harmful bacteria.
2. Size: 6'6" x 66'
3. Nominal Thickness: 0.079" (2mm)
4. Backing: 2-ply coating technology PVC backing system with fiberglass inner layer.
5. 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, 1,000 g. load, S-33 Taber Abrasion Test
 - g. Anti-Microbial: ISO 27447 and ISO 8461997
 - h. Dimensional Stability: EN 434 <0.20%
 - i. Light Fastness: EN 20105 B02 - 6
 - j. 15 year limited commercial warranty

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2.6 Provide SafeDecor Sheet Vinyl flooring supplied by TD2 Floors Distributor

Distributor Name: _____

Contact Name: _____

Contact Phone: _____

Material Description:

Pattern name: _____

Pattern color: _____

Pattern number _____

Areas used: _____

Physical Characteristics:

SafeDecor Collection

1. Classification: 28 mill, Type I, Grade 1, embossed, TECH (Technologically Explored Ceramic Hard surface) commercial grade wear layer.
2. Size: 6'6" x 66'
3. Nominal Thickness: 0.079" (2mm)
4. Backing: 1-ply Flexyback backing system with fiberglass inner layer
5. 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, 1,100 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 >0.9, Wet >0.9
 - f. Wear Resistance: ASTM 3884-01 >100,000 cycles, 1000 g. load, S-33 Taber Abrasion Test
 - g. Anti-Bacterial: ISO 846:1999 GraboSan Pass
 - h. Dimensional Stability: EN 434 <0.16%
 - i. Light Fastness: EN 20105 B02 - 6
 - j. 25 year limited commercial warranty

2.7 **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.
- D. Welding Rods: Manufacturer's standard; color as selected to complement material.
- 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, flat, 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 all concrete subfloors, regardless of age, 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. Three calcium chloride or relative humidity tests are required for the first 1,000 square feet of installation and one additional test for each 1,000 square feet there after. When measured in accordance with F-1869, the moisture emission rate should not exceed 5 pounds every 1,000 square feet per 24 hours. The acceptable test result when using test method F- 2170 should not exceed seventy five percent (75% rH) AND pH readings should not exceed 9.0. All test results must be documented and retained. In the event of a product claim, all claims must have written test results submitted. Any claim that does not have written documentation of the above tests being performed and submitted per below will be disallowed.
- E. Submit written moisture and concrete pH tests to Architect and General Contractor **prior** to beginning the installation of the 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 prior to beginning the installation in writing to Architect, General Contractor, and Flooring Distributor. Do not proceed with installation until adverse conditions are resolved.

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 a Portland cementitious latex fortified underlayment, per manufacturer's recommendations. Apply compound in strict accordance with manufacturer's printed instructions.
- C. Remove all debris, sand, and other materials by vacuuming. Failure to remove any debris may result in lack of adhesion and/or telegraphing.

3.3 GENERAL INSTALLATION PROCEDURES

- A. Install sheet flooring and accessories in strict accordance with the latest edition of "TD2 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. Any use of other adhesives other than a TD2 approved adhesive makes all claims invalid.
- 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 epoxy 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. Allow material to relax for twenty four (24) hours to forty eight (48) hours.
- B. Trim off all damaged ends.
- C. Straight edge and under scribe all side and end seams.
- D. Fold back sheet half-way. Do not crimp sheet flooring when folding. Spread adhesive with manufacturer recommended 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.
 - 2. Where it is not possible to heat weld seams, chemical weld all seams using TD2 commercial seam welding. TD2 Floors highly recommends the heat welding method.

3.5 INSTALLING OVER EXISTING RESILIENT FLOOR COVERINGS

- A. To assure that your customer will receive a smooth, flat, indentation resistant TD2 Floor, TD2 flooring should be installed directly over a clean, properly prepared concrete substrate. However, in some cases it may be preferable to leave the existing resilient floor covering in place and go directly over the top (fully bonded single flooring layer only) with the new floor. The performance of the finished floor is directly dependent on the condition and continued bond of the existing resilient flooring. Any irregularities in the existing flooring (such as bumps, depressions, or tile joints) will show through or telegraph, to the new floor. This is especially true for sheet vinyl installations.
- B. Guidelines for installation over existing resilient flooring:
 - 1. TD2 products can be successfully installed over most clean, dry, securely bonded properly prepared, non-cushioned single-layer resilient flooring. Do not install over more than one layer. Do not install over an existing resilient floor where the TD2 finished floor will be subjected to heavy rolling loads or static loads such as hospital beds, heavy furniture, or fixtures.
 - 2. TD2 floors need to be installed over as smooth a substrate as possible. Smooth the existing floor using a latex patching or underlayment compound (also known as "embossing leveler") to fill in any depressions or other imperfections in the existing floor.
 - 3. Make sure the product is recommended as an embossing leveler. Follow the manufacturer's instructions, particularly the proper ratio of powder to liquid and the proper drying time. Do not force dry with heat gun or fans.
 - 4. TD2 adhesive takes longer to set up when installed over an existing floor.

3.6 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. Rinse floor thoroughly with clean lukewarm water and again wet-vac surface to remove all excess water. Use of a minimal amount of water during cleaning/rinsing is recommended.
 - 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.

3.5 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.