TEKNOFLOR®

TEKNOFLOR® CS™ PVC-FREE ENVIRONMENTAL POLYMER RESILIENT SHEET ARCHITECTURAL GUIDE SPECIFICATION

This is a manufacturer specific proprietary product specification using the proprietary method of specifying applicable to project specifications and master guide specifications.

Specifier should edit guide specifications in accordance with project requirements. All imperial dimensions are approximate. Products are manufactured to exact metric standards. Optional text is indicated by brackets [ ]. Delete optional text in final copy of specification. Add or modify text as required. Specifier Notes typically precede specification text: **delete notes in final version of specification.**

Revise below to suit project requirements, specification practices and section content. Refer to CSI/CSC Master Format for other section numbers and titles. The specifier is responsible for the accuracy of all project specifications, including any guide specifications used.

The designer/specifier is responsible for product selection as well as the use and application of this information, and should contact the manufacturer to ensure that models, types, finishes, etc. are available in the United States and that the associated specification information is valid and correct. TEKNOFLOR® shall not be liable for any damages arising out of the use of its guide specifications.

SECTION 09657
COMMERCIAL HOMOGENEOUS RESILIENT SHEET FLOORING
(PVC-Free Commercial Sheet Flooring)

PART 1 GENERAL

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Specifier Note: List significant generic types of products, work or requirements

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1.01 SECTION INCLUDES

A. This section includes labor, materials and other services necessary to complete PVC-Free Commercial Sheet Flooring systems and accessories work.
B. Conform with requirements of all Sections of Division 1, General Requirements, as it applies to the work of this Section.

1.02 RELATED SECTIONS

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Specifier Note: List statements that draw the reader's attention to other specification sections dealing with work directly related to this section.

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A. Section 03300 - Cast-in-Place Concrete: Concrete finishing.
B. Section 06100 - Rough Carpentry: Plywood floor sheathing.
C. Division 7 - Thermal and Moisture Protection.
D. Division 15 - Mechanical.

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Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This Article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

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1.03 REFERENCES

A. General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
B. American Society for Testing & Materials (ASTM):
    1. ASTM E662: Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
    2. ASTM E648: Standard Test Method for Fire Resistance
    3. ASTM F970: Standard Test Method for the Static Load Limit
    4. ASTM F925: Standard Test Method for Resistance to Chemicals
    5. ASTM C1028: Standard Test Method for the Static Coefficient of Friction

6. ASTM F386: Standard Test Method for the Thickness of Resilience
7. ASTM F 1514: Standard Test Method for the Heat Stability by Color Change.
8. ASTM F1914: Standard Test Method for the Short-term Indentation Resistance
9. CA 01350: Standard Test for the Indoor Air Quality.
10. ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
11. ASTM F1482: Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring.
12. ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
13. ASTM F2170: Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes.

C. Resilient Floor Covering Institute (RFCI)
1. RFCI Standard Slab Moisture Test Method (Calcium Chloride Method).

1.04 SYSTEM DESCRIPTION

A. Performance Requirements: Provide PVC-Free Commercial Sheet Flooring which has been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage, or failure.

1.05 SUBMITTALS

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Specifier Note: Include requests for relevant data to be furnished by the contractor before, during, or after construction.
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A. Product Data: Submit manufacturer's current printed product literature, specifications, installation instructions, and field reports in accordance with Section 01330 - Submittal Procedures.
B. Shop Drawings: Submit shop drawings to indicate materials, details, and accessories in accordance with Section 01330 - Submittal Procedures including but limited to the following:
1. Submit a cut diagram indicating seam locations and roll direction. Use mitered seam layouts for corners when changing directions 180 degrees (e.g. when running material down corridors which bisect at a right angle), unless approved otherwise.
C. Quality Assurance Submittals: Submit the following:
1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
2. Manufacturer's Instructions: Current published manufacturer's installation and maintenance instructions.

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Specifier Note: Coordinate paragraph below with **Part 3: Field Quality Requirements** Article herein. Retain or delete as applicable.
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3. Manufacturer's Field Reports: Manufacturer's field reports specified herein.
D. Closeout Submittals: Submit the following:
1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance.
2. Warranty: Warranty documents specified herein.

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Specifier Note: This Article should include standards, limitations and criteria which establish an overall level of quality for products and workmanship for this section. Coordinate with Section 01430 - Quality Assurance.

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1.06 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project with minimum 5 years' experience.

B. Regulatory Requirements: Provide PVC-Free Commercial Sheet Flooring in compliance with the following:
   1. Americans with Disabilities Act Architectural Guidelines (ADAAG).
   2. Occupational Safety & Health Administration (OSHA).

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Specifier Note: Retain paragraph below for erected assemblies required for review of construction, coordination of work of several sections, testing or observation of operation.

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C. Mock-ups: Install at project site a job mock-up using acceptable products and manufacturer approved installation methods, including concrete substrate testing. Obtain Owner's and Consultant's acceptance of finish color, texture and pattern, and workmanship standards.

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Specifier Note: Edit paragraph below to specifying mock-up size.

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1. Mock-Up Size: [Specify mock-up size.].
2. Maintenance: Maintain mock-up during construction for workmanship comparison; remove and legally dispose of mock-up when no longer required.
3. Incorporation: Mock-up may be incorporated into final construction upon Owner's approval.

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Specifier Note: Describe requirements for meetings to coordinate materials and techniques, and to sequence related work.

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D. Pre-installation Meeting: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements.

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Specifier Note: This Article should include special and unique requirements. Coordinate with Sections 01650 - Product Delivery Requirements or Section 01660 - Product Storage and Handling Requirements.

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1.07 DELIVERY, STORAGE & HANDLING

A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Deliver, store and handle resilient flooring materials in accordance with Section 01610 - Basic

Material Requirements.

C. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
D. Store materials protected from exposure to harmful weather conditions, at temperature and humidity conditions recommended by manufacturer.
E. Store rolls in dry locations. Stand rolls on end. Protect and secure rolls from falling.

1.08 WASTE MANAGEMENT AND DISPOSAL

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Specifier Note: Include information that will assist the contractor in dealing with the disposal of construction waste materials in ways other than using landfill resources.

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A. Deposit all packaging materials in appropriate container on site for recycling or reuse.
B. Avoid using landfill waste disposal procedures when recycling facilities are available.
C. Keep all discarded packaging away from children.

1.09 PROJECT CONDITIONS

A. Temperature Requirements: If storage temperature is below 65°F (18°C), the TEKNOFLOR CS™ PVC Free Floors™ product must be moved to a warmer place and allowed to reach a stable temperature before unrolling or installation. The room air temperature must not be below 65°F (18°C) and the floor substrate temperature not below 50°F (10°C). For further information, refer to the current Installation Guide.
B. Maintain air temperature and structural base temperature at flooring installation area between 65°F (18°C) and 80°F (26°C) for 48 hours before, during, and 120 hours (5 days) after installation.

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Specifier Note: Coordinate Article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

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1.10 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

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Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements. All TEKNOFLOR flooring products are sold with a limited product warranty. The length of warranty is defined by the manufacturing process, the thickness of the product, and the expected traffic conditions for the specific flooring product. Under normal use and service, TEKNOFLOR flooring products are warranted to be free from defects in materials and workmanship within the specified term after the date of purchase, when installed and maintained in accordance with TEKNOFLOR'S recommendations. TEKNOFLOR CS PVC Free Sheet has a 12-year warranty.

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C. Warranty Period for TEKNOFLOR CS™ PVC Free Sheet shall be 12 years commencing on Date of purchase.

1.11 EXTRA MATERIALS

A. Provide extra materials of PVC-Free Commercial Sheet Flooring and adhesives in accordance with Section 01780 - Closeout Submittals.
B. Provide [_____]sqft ([_____]m2) or 5% of each color, pattern and type flooring material required for project for maintenance use.
C. Provide [_____]sqft ([_____]m2) or 5% of extra materials in one piece and from same production run as installed materials.
D. Clearly identify each roll of sheet flooring and each container of adhesive.
E. Deliver to Consultant, upon completion of the work of this section and store where directed.

PART 2 PRODUCTS

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Specifier Note: For information on resilient sheet flooring and resilient sheet flooring refer to the TEKNOFLOR CS Architectural Binder or contact TEKNOFLOR directly to obtain information and assistance. Toll-Free 800-522-9166 | TEKNOFLOR.COM

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2.01 MANUFACTURER

A. TEKNOFLOR
1005 South 60th Street
Milwaukee, WI 53214
Tel. 800.522.9166
Fax 414.944.0550

2.02 PVC-FREE COMMERCIAL SHEET FLOORING

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Specifier Note: TEKNOFLOR PVC Free Floors™ CS Sheet Flooring is designed from minerals and thermoplastic polymers. CS is made from 25% pre-consumer recycled content and is a superior alternative to many traditional flooring materials that are considered environmentally friendly. Easy to maintain, CS is equipped with excellent stain and bacteria resistance that withstands the toughest use. It is ideal for heavy traffic and load areas including schools, offices, department stores, day care centers, retirement homes and hospitals.

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Specifier Note: Select material to suit project requirements.

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B. Acceptable material: TEKNOFLOR CS Sheet (measurements and product weights given below are approximate):
1. Thickness: .08” (2.0mm)
2. Roll Width: 4’9” (1.45m)
3. Roll Length: 82.02’ (25m)
4. Roll Weight: 255 lb (116 kg)
5. 39 PVC Free SKU’s

C. Test Data:
1. ASTM F925 Resistance to Chemicals: No or slight staining - Meets or exceeds requirements (Refer to Chemical resistance chart)
2. ASTM F1514 Heat Stability: Avg. Delta E 0.18 – Exceeds Requirements (<8.0 Delta E)

3. ASTM F1515 Light Stability: 300 AFU Exposure Delta E 0.80 – Exceeds Requirements (<8.0 Delta E)
4. ASTM F1914 Short Term Indentation: 0.003 Inch Residual Indentation (≤ 0.012 Inch Residual Indentation)
5. ASTM F970 Residual Indentation: 1,000 PSI at or below maximum residual indentation (175 PSI @ ≤0.005 Inch Residual Indentation) - Exceeds Requirements
6. Phillips Castor Chair Test: 20,000 cycles 5 - No Change in appearance (150 lbs. load, 20,000 cycles Rating Scale 5 - No Change / 1 - Severe Change)
7. ASTM D2047 Slip Resistance: Static Coefficient of Friction, SCOF Dry: 0.79, SCOF Wet: 0.78.
8. ANSI B101.3 Dynamic Coefficient of Friction: High Traction Surface Wet DCOF
9. ASTM E648 (NFPA 253 and FTM Standard 372) Critical Radiant Flux/Flammability: 0.99 W/cm^2 - Meets Requirements Class 1 (≥0.45 W/cm^2)
10. ASTM E662 Smoke Density: <450 DM Corrected - Meets Requirements
11. ISO 22196 Microbial Resistance: > 99.999% reduction
12. ASTM F963 Heavy Metals Content Analysis: <0.1 ppm None detected
13. ANSI ESD STM97-2 Body Voltage: ≤ 2.0 kV astatic
14. Floorscore: Certified
15. REACH – Substances of Very High Concern (SVHC): SVHC's tested must be less than 0.1% by product weight. Meets Requirements.

2.03 ACCESSORIES

A. PVC-Free Welding Rod: Acceptable material:
   1. TEKNOFLOR CS Welding rod
B. Cove former: Acceptable material, sized to suit application:
C. TEK ONE™ Transitional Pressure Sensitive Adhesive
   a. Standard acrylic adhesive suitable for most situations. Strong green grab when wet and sets hard when cured.
   b. Provides a 10 year under bed bond warranty.
   c. Moisture & pH Limits: 85% RH and 5 Lbs. MVER & 8-10 pH
D. TUF STIK 150 Spray Adhesive
   a. High Shear spray adhesive suitable for most situations. Ideal for occupied renovations or where fast turnaround is important. Allows immediate use of the floor after installation.
   b. Moisture & pH Limits: 93% RH and 6 Lbs MVER & 8-10 pH
E. Subfloor Filler and Leveler: Use only gray Portland cement-based underlayments, and patching compounds. Use for filling cracks, holes or leveling. White gypsum materials are not acceptable. Contact TEKNOFLOR for more information and recommendations.
F. Metal edge strips:
   1. Aluminum extruded, smooth, [mill finish] stainless steel with lip to extend under floor finish, shoulder flush with top of adjacent floor finish.

2.04 SOURCE QUALITY

A. Source Quality: Obtain PVC-free Flooring products from a single manufacturer.

PART 3 EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog, installation instructions and product label instructions for installation.

3.02 EXAMINATION

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

3.03 SUBFLOOR PREPARATION

A. Remove ridges and bumps.
B. Apply subfloor filler to low spots and cracks to achieve floor level to a tolerance of 1/8 inch in 10 feet, allow to cure.
C. Meet ASTM F710 Standard for Concrete or other monolithic floors / ASTM F1482 Standard for Wood Subfloors.

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Specifier Note: Use Subfloor treatment for existing surfaces, only when required.

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D. Prepare and seal porous and powdery concrete surfaces in accordance with flooring manufacturer's written instructions.
E. Ensure concrete slopes to drains and other floor sinks.
F. Remove dust, old adhesive, paint, dirt, wax, sealer and foreign matter from existing surfaces.

3.04 PREPARATION

A. TEKNOFLOR™ CS sheet shall be installed over subfloors conforming to ASTM F710 for concrete and other monolithic floors or ASTM F1482 for wood subfloors.
B. Maintain air temperature and structural base temperature at flooring installation area between 65°F (18°C) and 80°F (26°C) for 48 hours before, during and 24 hours after installation.
C. Perform moisture tests on concrete floors regardless of the age or grade level. Verify concrete substrate is dry in accordance with the RFCI Industry Standards Slab Moisture Test Method (Calcium Chloride Method and or in-situ Relative Humidity Method), in strict accordance with ASTM instructions.
D. Perform moisture condition test in each major area. A minimum of 1 test per 93 m^2 (1000 ft^2), prior to installation. Moisture emissions from concrete subfloors must not exceed 5 lbs per 1000sf per 24 hours (1.4 kg H2O/24 hr/93 m^{26}) via the Calcium Chloride Test Method (ASTM F1869) or 85% per 1000sf per 24 hours (1.4 kg H2O/24 hr/93 m^{26}) via the RH Test Method (ASTM F2170). If subfloor moisture exceeds the allowable maximum for installing TEKNOFLOR flooring, please call your local TEKNOFLOR representative for advice. www.teknoflor.com/sales
E. Conduct moisture tests around room perimeter, at columns and where moisture may be evident.
F. Perform alkali tests to ensure pH levels of concrete subfloor surface do not exceed pH 9.9. Concrete must be neutralized if above pH 9.9.
G. Do not proceed with work until results of moisture condition and/or pH tests are acceptable.
H. Wood subfloors shall not exceed 13% moisture content when measured with a Delmhorst Wood Moisture Tester.
I. Underlayment and Patching Compounds: Use only grey colored Portland cement based underlayments; patching compounds are used for filling cracks, holes and leveling. White gypsum materials are not acceptable.

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Specifier Note: Coordinate Article below with manufacturer's recommended installation details and requirements.

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3.05 INSTALLATION

A. Relative humidity of the concrete floor must not exceed 85% RH. Temperature during installation and that of subfloor and material should be at least +65°F (15°C). Before installing the flooring, it must be ensured that the final levelling compounds have dried.

B. The flooring must be installed using water based acrylic dispersion adhesives approved by TEKNOFLOR. ADHESIVE: TEKNOFLOR: TEK ONE™ Transitional Pressure Sensitive Adhesive or TUF STICK 150 Spray Adhesive. Installation is performed using semi-wet gluing method, paying attention to the absorbency of subfloor, the adhesive and conditions. The flooring **must not** be installed on top of existing flooring.

C. The floor must be rolled while the adhesive is still fresh. The weight of the roll should be 100 lbs. or greater. Rolling prevents the emergence of adhesive trowel marks and indentations on the finished floor surface. Avoid traffic on the floor and do not move furniture until the adhesive is totally dry.

D. After installation, the floor surface should be carefully protected against construction-phase loads and stresses with an appropriate material for the purpose. The protective materials should be taped to each other only – not to the surface of the flooring!

E. Coved Installation: Seams and coved skirtings are to be heat welded using a TEKNOFLOR PVC Free Floors™ CS Sheet welding rod. Also corners should be welded. To avoid differences in gloss, use a suitable welding temperature and speed. Warming up the material before cutting and fitting is recommended. Using too high temperature when warming up the material for coving or drains details may damage the flooring surface. Flash-coving joints must also be neatly trimmed before welding, in order to obtain the best possible adhesion.

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Specifier Note: Coordinate Article below with Division 1 Quality Assurance and Quality Control Sections.

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3.06 FIELD QUALITY REQUIREMENTS

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Specifier Note: Establish number and duration of periodic site visits with Owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

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A. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

1. Site Visits: [Specify number and duration of periodic site visits.].

3.07 CLEANING

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Specifier Note: TEKNOFLOR CS Sheet compact ionomer-impregnated wear layer rejects dirt, making maintenance easy and economical. The flooring features an excellent resistance to chemicals such as acids, alkalis and solvents, and does not react to rubber. Because the flooring requires no polishing, life cycle costs remain low. Dirt accumulated during the construction phase can be easily removed after installation and the spaces can be quickly taken for productive use.

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A. Cleaning:

1. Remove loose dirt.
2. Wash the floor using neutral or mild alkaline cleaner properly diluted in clean cool water. An auto scrubber or low speed floor machine with red pads should be used.
3. Avoid excessive use of water. Clean floor can be treated with a maintenance cleaner

solution.

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Specifier Note: If a construction waste separation and disposal work plan is incorporated as part of the project, ensure that this section makes reference to how the excess flooring material can be recycled or otherwise disposed of. Avoid sending construction waste to landfill sites if alternative means of disposal are available.

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3. Remove construction debris from project site and legally dispose of debris.

3.08 PROTECTION

A. Cover and protect finished installation from damage from other trades using a non-staining, temporary floor protection system appropriate for conditions.

B. Protection:

1. Protect the newly installed flooring from foot traffic for 24 hours and heavy rolling traffic for 72 hours.
2. Protect installed product and finish surfaces from damage during construction in accordance with section 01760 - Protecting Installed Construction.

END OF SECTION