**DIVISION 09 – FINISHES**

**SECTION 09 65 13.23 - RESILIENT STAIR TREADS**

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BEGINNING OF SECTION 09 65 13.23

**PART 1 – GENERAL**

1. SUMMARY
	1. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications. Section includes: Resilient Stair Treads and Risers and accessories.
2. DESCRIPTION OF WORK
	1. **Work Included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
		1. Section 09 65 13.23 Resilient Stair Treads and Risers
		2. Section 09 65 13.33 Resilient Accessories
		3. Section 09 01 00 Maintenance of Finishes
	2. **Related Work:** The following items are not included in this Section and are specified under the designated Sections:
		1. Section 03 30 00 Cast-In-Place Concrete, Substrate Preparation
		2. Section 06 10 00 Rough Carpentry, Substrate Preparation
	3. **References (Industry Standards):**
		1. ASTM International (ASTM):
			1. ASTM F2169, Standard Specification for Resilient Stair Treads
			2. ASTM E648, Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
			3. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
			4. ASTM D2047, Standard Test Method for Static Coefficient of Friction as Measured by the James Machine
			5. ASTM F970, Standard Test Method for Static Load Limit of Resilient Flooring
			6. ASTM F970 (Modified), Standard Test Method for Maximum Weight Limit of Resilient Flooring
			7. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring
			8. ASTM F1514, Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
			9. ASTM F1515, Standard Test Method for Measuring Light Stability of Resilient Flooring
			10. ASTM F710, Standard Practice for Preparing Concrete to Receive Resilient Flooring
			11. ASTM F1482, Standard Guide to Wood Underlayments products Available for Use Under Resilient Flooring
3. SUBMITTALS
	1. **General:** Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
	2. **Product Data:** Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed for use also available at [www.sixdegreesflooring.com](http://www.sixdegreesflooring.com).
	3. **Samples:** Submit representative samples of each product specified for verification, in manufacturer’s standard size samples of each resilient product color, texture and patter required.
4. QUALITY ASSURANCE
	1. **Manufacturer Qualifications:** Provide resilient stair treads and accessory materials manufactured in the United States of America by a firm with a minimum of 10 years’ experience with resilient flooring materials of type equivalent to those specified.
		1. Provide resilient stair tread products, including risers and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
		2. Manufacturer shall be capable of providing technical training and technical field service representation.
	2. **Installer Qualifications:** Installer must be professional, licensed, insured and acceptable to manufacturer of resilient stair tread materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project.
	3. **Sustainable Design Requirements:**
		1. Vinyl Stair Tread must be easily cleaned and do not require coatings and strippers, or use chemicals that may be hazardous to human health.
		2. Vinyl Stair Tread must have is 100% Recyclable.
		3. Vinyl Stair Tread must have be SCS FloorScore® Certified and meets California Specifications Section 01350.
5. DELIVERY, STORAGE, AND HANDLING
	1. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
	2. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48-hours prior to installation.
	3. Keep material in specially designed packages to hold form until installation.
6. PROJECT CONDITIONS
	1. Install Vinyl Stair Treads after other finishing operations, including painting, have been completed.
	2. Maintain temperature at service levels and/or the ambient temperature must remain steady (± 10° F) between 65° F and 85° F for at least 48-hours prior to, during and until substantial completion.
	3. Maintain relative humidity at service levels, or between 40% and 65% RH.
	4. Avoid conditions in which dew point causes condensation on the installation surface.
7. WARRANTY
	1. Provide manufacturer’s standard limited commercial warranty to cover manufacturing defects.

**PART 2 - PRODUCTS**

*Note To specifier: remove and / or amend sections as necessary.*

1. **MANUFACTURER**
	1. Basis-of-Design: Six Degrees Flooring | 931 Springville Ave. | Fostoria, OH 44830 | P: (844) 432-5885
	2. Substitutions: No substitutions permitted
2. **PRODUCTS**
	1. LUXURY VINYL COMBINATION TREAD / RISER
		1. Six Degrees IMPRESSION VINYL STAIR TREAD / RISER COMBINATION
		2. Specify Profile by number and description: *(profiles are listed on website:* [www.sixdegreesflooring.com](http://www.sixdegreesflooring.com) *and in the downloadable Full Product Brochure): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*
		3. Specify by Dimension - length (length, style number, with riser, without riser shall all be specified here. Material shall conform to all standards and shall contain no asbestos fiber): *(length, style number, as well as texture description are all listed on website:* [www.sixdegreesflooring.com](http://www.sixdegreesflooring.com) *and in the downloadable Full Product Brochure): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

iv. ASTM F2169, Standard Specification for Resilient Stair Treads; Complies, Type TV, Class 2

v. ASTM E648, Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source; Class I, >.45 W/cm2

vi. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials; Passes <450

vii. ASTM D2047, Standard Test Method for Static Coefficient of Friction as Measured by the James Machine, >0.6

viii. ASTM F970, Standard Test Method for Static Load Limit; Passes, 250 PSI

ix. ASTM F970 (Modified), Standard Test Method for Maximum Weight Limit; 1,000 PSI

x. ASTM F925, Standard Test Method for Resistance to Chemicals; Excellent (chart available on request)

xi. ASTM F1514, Standard Test Method for Measuring Heat Stability; Passes

xii. ASTM F1515, Standard Test Method for Measuring Light Stability; Passes

1. **INSTALLATION AND MAINTENANCE MATERIALS**
	1. **Moisture Mitigation:** Moisture testing is required for all Impression Vinyl Stair Tread installations. Mitigation should be performed if results indicate high levels of moisture. Recommended Moisture Mitigation Product:
		1. Excelsior MM-100, Moisture Mitigation provided by Six Degrees
			1. Unit Size: 2.5 Gallons
			2. Coverage: 1000 square feet per unit with one coat
			3. MM-100 is a water, solvent and VOC free, polyurethane-based moisture mitigation product used to treat concrete slabs with excessive moisture levels beyond what flooring adhesives allow.
			4. MM-100 can block moisture up to 20 lbs. MVER or 99% RH.
			5. MM-100 is a single component product, eliminating extensive mix times and concerns regarding pot life.
			6. MM-100 does not require aggressive concrete preparation, such as shot blasting or diamond grinding.
			7. MM-100 is a two coat system that is incredibly easy to apply and does not require any specialized equipment, its excellent coverage rates also make it incredibly cost effective.
			8. Despite being a two coat system, MM-100 is incredibly fast drying.
			9. Flooring or subsequent coatings can be installed in less than two hours.
			10. Backed by a 10 year material and labor warranty, MM-100 is a fast and easy solution for the moisture issues that commonly plague flooring installations.
	2. **Substrate Preparation Products:** Substrates should be prepared to properly receive the resilient tread products being specified. Trowelable leveling and patching compounds that are latex-modified, Portland cement based or blended hydraulic cement based formulation. Recommended Substrate Preparation Products:
		1. Excelsior NP-230, Non-Porous Substrate Primer provided by Six Degrees
			1. Unit Size: 2.5 Gallons
			2. Coverage: 1000 Square Feet per unit with one coat
			3. Used over MM-100 to promote adhesion of cementitious materials
			4. Single component and fast drying to allow for quick and easy installation
			5. Contains an aggregate to provide mechanical bond for cementitious materials
		2. Excelsior CP-300, Cementitious Patch provided by Six Degrees
			1. Unit Size: 10 lb. Pail
			2. Coverage: 33 Square Feet per unit @ 1/8”
			3. Doesn’t require primer over porous substrates
			4. Install flooring in as little as 30 minutes
		3. Excelsior SU-310, Self-Leveling Underlayment provided by Six Degrees
			1. Unit Size: 50 lb. Bag
			2. 5500 PSI Compressive Strength after 28 days
			3. Install flooring within 12 hours
			4. Pumpable
	3. **Adhesives:** Adhesives should be selected based on the site conditions and use of the space being installed. Recommended Adhesive Products:
		1. Excelsior AW-510, Acrylic Wet-Set Adhesive provided by Six Degrees
			1. Unit Size: 1 Gallon & 4 Gallon
			2. Coverage: 150 Square Feet
			3. Standard installations over porous and non-porous substrates
			4. Hard set adhesive adding to dimensionally stable materials
			5. Excellent sheer strength
			6. Approved for Hill-Rom Beds
			7. Installation Limits
				1. 90% RH, ASTM F2170
				2. 6 lbs. MVER, ASTM F1869
				3. 7-10 pH
		2. Excelsior EN-610, Epoxy Nose Filler Adhesive provided by Six Degrees
			1. Unit Size: 13.5 oz. Cartridge
			2. Coverage: 25 linear feet with ½” bead / 50 linear feet with ¼” bead
			3. Standard installations over porous and non-porous substrates
			4. Directly install over concrete, metal or wood
			5. Excellent sheer strength
			6. Installation Limits
				1. 90% RH, ASTM F2170
				2. 6 lbs. MVER, ASTM F1869
				3. 7-10 pH
		3. Excelsior TP-620, Pressure Sensitive Tape based adhesive provided by Six Degrees
			1. Unit Size: 1” x 164’ (6 per case)

 4” x 164’ (3 per case)

 9.5” x 164” (1 per case)

* + - 1. Easy installations over porous and non-porous substrates
			2. No Clean-up, Limited Waste
			3. Superior sheer strength
			4. Installation Limits
				1. 80% RH, ASTM F2170
				2. 5 lbs. MVER, ASTM F1869
				3. 7-10 pH
		1. Excelsior MS-700, Modified Silane Wet-Set Adhesive provided by Six Degrees
			1. Unit Size: 3 Gallon
			2. Coverage: 480-705 Square Feet per unit
			3. Standard installations over porous and non-porous substrates
			4. Excellent green grab
			5. Hard set adhesive adding to dimensionally stable materials
			6. Excellent sheer strength
			7. Approved for Hill-Rom Beds
			8. Superior bond strength
			9. Great for environments with topical moisture
			10. Great for exterior applications
			11. Installation Limits, Indoor Installations only
				1. 95% RH, ASTM F2170
				2. 10 lbs. MVER, ASTM F1869
	1. **Maintenance Materials:** Proper maintenance of the installation is critical to the long term performance of the flooring products being specified. Using the appropriate chemicals to maintain the product according to the environment in which it is specified is critical. Recommended maintenance products:
		1. Excelsior NC-900, All-Purpose Neutral pH Cleaner provided by Six Degrees
			1. For initial maintenance.
			2. For daily and routine maintenance.
		2. Excelsior MF-940 for ease of floor maintenance, provided by Six Degrees
			1. Creates protective wear layer that protects flooring and eases maintenance.
		3. Excelsior GF-950, Gloss Acrylic Floor Finish, for ease of floor maintenance, provided by Six Degrees
			1. Creates protective wear layer that protects flooring and eases maintenance.
		4. Excelsior FR-920, Finish Remover, provided by Six Degrees
			1. Highly concentrated finish remover designed to remove topically applied flooring products.

**PART 3 – EXECUTION**

1. GENERAL
	1. **General Contractor Responsibilities:**
		1. Supply a safe, climate controlled building and subfloor as detailed in Six Degrees Technical Data Sheets.
		2. Ensure substrate meets the requirements of ASTM F2169, Six Degrees Technical Data Sheets and Excelsior Technical Data Sheets.
		3. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer’s instructions.
		4. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring per the manufacturer’s instructions.
		5. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
		6. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
		7. Conduct initial maintenance prior to final usage per the Six Degrees Commercial/Residential/Multi-Family Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.
	2. **Flooring Contractor Responsibilities**:
		1. Provide trained installers that are professional, licensed, insured and acceptable to manufacturer of resilient stair tread materials.
		2. Ensure installers or installation teams meet one of the following requirements:
		3. Have completed INSTALL (International Standards & Training Alliance) or CFI (Certified Floorcovering Installers) training programs and/or are certified by INSTALL or CFI.
		4. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager).
		5. Follow all requirements in the appropriate Six Degrees and/or Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.
2. EXAMINATION
	1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.
	2. **Verification of Conditions:** Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound. Confirm all areas are properly sealed and acclimated per manufacturer’s requirements.
	3. **Verification of Products:** In accordance with manufacturer’s installation requirements, visually inspect material for size, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.
3. SUBSTRATE PREPARATION
	1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and preparation. All work required ensuring substrate or subfloor meets manufacturers’ guidelines are the responsibility of the general contractor.
		1. Ensure surface is troweled flush with surface of concrete.
		2. Follow material manufacturer’s as well as adhesive manufacturer’s instructions for installation.
	2. **Preparation**: Ensure substrate meets the requirements of ASTM F710 for concrete substrates and ASTM F1482 for wood substrates and/or Six Degrees Technical Data Sheets and Excelsior Technical Data Sheets.
		1. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.
		2. Acclimate all products to be used during the installation and the installation environment prior to installation according to the manufacturers written instructions.
	3. **Concrete Substrates:**
		1. **Moisture Testing:** Perform moisture testing per the manufacturer’s recommendations to determine conditions, it is recommended to treat new and existing substrates a little bit different to ensure adequate conditions exist for installation.
			1. New concrete substrates: it is recommended to perform ASTM F2170 Relative Humidity testing no more than a week prior to installation to determine the levels present and when to proceed with the installation.
			2. Existing concrete substrates: in addition to ASTM F2170 testing, existing slabs that have previously had floor covering installed, must be tested to ASTM F1869 Calcium Chloride test kits to determine the MVER of the concrete.
		2. Mechanically remove contamination on the substrate that may cause damage to the flooring material, this includes paint, permanent and non-permanent markers, pens, crayons, etc. Leaving these on the substrate or marking with them on the back of the material could cause bleed through and damage the flooring.
		3. Fill cracks, holes, depressions and irregularities in the substrate to prevent transferring through to the surface of the resilient treads. Use a high-quality Portland cement based product such as Excelsior installation products provided by Six Degrees.
	4. **Wood Substrates:** wood substrates must have a minimum 18” (45.7 cm) of cross ventilated space beneath the joist.
		1. Wood substrates must be a minimum 1” thick with a double layer construction.
		2. Wood substrates must be rigid and free of movement.
		3. Wood substrates must not be OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments.
4. INSTALLATION
	1. **General**: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer’s technical data sheets.
	2. **Resilient Vinyl Treads/Riser:** Install material in accordance with manufacturer’s recommendations.
		1. Select the appropriate adhesive for the application and job site conditions.
		2. Dry fit Risers to the required lengths.
		3. Scribe glue line on back of riser and at edge of Riser material.
		4. Apply adhesive in full spread for complete coverage of the Riser material.
		5. Apply **Vinyl Risers** to the prepared surface as level and straight as possible.
		6. Hand roll Riser material onto wall and floor surface and remove excess adhesive.
		7. Ensure material is installed according to installation instructions and rolled appropriately into the adhesive.
	3. **Interface with Other Work:** J-Channel Transition is a trim piece that transitions from the riser of one step to the tread of the step below.
	4. **Excelsior EN-**610: All stair treads must have the Excelsior EN-610 Epoxy Nose Filler installed in the stair nose. Failure to use the Epoxy Nose Filler may result in premature wear and damage which could compromise egress safety.
5. CLEANING & MAINTENANCE
	1. **General**: Clean up installation area and sweep, dust or wipe material to remove any dirt, dust or debris.
	2. **Initial Maintenance**: Conduct initial maintenance per the manufacturer’s recommended procedures stated in the Maintenance Documents. All documentation is available upon request or from the Six Degrees website: [www.sixdegreesflooriing.com](http://www.sixdegreesflooriing.com) Excelsior Cleaning products and floor finishes are the recommended products for use, all can be found linked to the product on the Six Degrees website or at [www.excelsiorproducts.net](http://www.excelsiorproducts.net).
	3. **Regular Maintenance**: Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the treads. The amount of maintenance depends directly upon the amount of dirt and particulates the treads are subjected to.
6. CLOSEOUT ACTIVITIES
	1. **General**: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities.
	2. **Protection**: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Be sure all construction debris is swept up and removed prior to the protective material being installed and does not get trapped underneath. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect risers from scuffing and tearing using temporary surface protection as well.

END OF SECTION 09 65 13.23