

Note to Specifier: This Guide Specification has been created to assist in preparing a Project/Master Specification. In accordance with CSI/CSC (Construction Specifications Institute/Construction Specifications Canada)'s MasterFormat®, this Guide Specification can be used with most Project/Master Specification formats, following simple editing.

Note to Specifier: **The enclosed requirements are intended for indoor installations over concrete.** For wood or steel stairs, please contact Mondo's Technical Department (technical@mondousa.com). If the provisions described herein are adopted for installations over other types of substrates besides concrete or for installations outdoors, Mondo's Limited Material Warranty will be null and void and the Specifier will be held liable.

Note to Specifier: This Guide Specification describes the resilient stair treads and risers that will be installed. The number and title of the section may be changed, if the Specifier deems necessary, but in any circumstance it will belong to the general CSI/CSC Section 09 65 00: Resilient Flooring.

SECTION 09 65 13.23 Resilient Stair Treads and Risers

1 PART 1 – GENERAL

1.1 SUMMARY

1.1.1 Products Supplied

- A. Resilient stair treads and risers.
- B. Accessories required for installation, maintenance, and repair.

1.1.2 Related Requirements

Note to Specifier: The following CSI/CSC sections serve as a guide to what is essential information needed to determine the acceptability of the site conditions required for the installation of stair treads and risers. The Specifier may choose to include other sections deemed necessary.

- A. Section 02 25 00 – Existing Material Assessment
- B. Section 03 05 00 – Common Work Results for Concrete
- C. Section 07 05 00 – Common Work Results for Thermal and Moisture Protection
- D. Section 07 10 00 – Dampproofing and Waterproofing

1.2 REFERENCES

1.2.1 ASTM International (ASTM)

- A. ASTM C1028: Standard Test Method for Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
- B. ASTM D2240: Standard Test Method for Rubber Property (Durometer Hardness).
- C. ASTM E648: Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source.
- D. ASTM E662: Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials.
- E. ASTM F386: Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces.

- F. ASTM F710: Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring.
- G. ASTM F925: Standard Test Method for Resistance to Chemicals of Resilient Flooring.
- H. ASTM F970: Standard Test Method for Static Load Limit.
- I. ASTM F1514: Standard Test method for Measuring Heat Stability of Resilient Flooring by Color Change.
- J. ASTM F1869: Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- K. ASTM F2169: Standard Specification for Resilient Stair Treads.
- L. ASTM F3010: Standard Practice for Two-Component Resin Based Membrane-Forming Moisture Mitigation Systems for Use Under Resilient Floor Coverings.
- M. ASTM F3311: Standard Practice for Mat Bond Evaluation of Performance and Compatibility for Resilient Flooring System Components Prior to Installation.

1.2.2 State of California (CA)

- A. CA Section 01350. Standard Method for the Testing and Evaluation of Volatile Organic Compound Emissions from Indoor Sources Using Environmental Chambers. California Department of Public Health (CDPH) method v1.2.

1.2.3 International Organization for Standardization (ISO)

- A. ISO 9001: Quality management systems – Requirements.
- B. ISO 14001: Environmental management systems – Requirements with guidance for use.

1.3 SUBMITTALS

Note to Specifier: The following are typical submittals. The Specifier may choose to include other submittals deemed necessary. Technical and warranty documents are available for download at www.mondocontractflooring.com or may be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138).

1.3.1 Action Submittals

- A. Provide material sample for verification of physical characteristics, such as color and surface texture, for each specified Manufactured Product.
- B. When required, General Contractor (GC) must provide shop drawings prepared for the project that illustrate layouts, details, dimensions, and other pertinent data useful to the Flooring Contractor (FC).

1.3.2 Informational Submittals

- A. Provide Manufacturer's current published technical data sheets (TDS) and guide specifications for all Products Supplied.
- B. Provide Manufacturer's current published substrate surface preparation manual.
- C. Provide Manufacturer's current published installation manuals for all Products Supplied.

1.3.3 Closeout Submittals

- A. Provide Manufacturer's current published maintenance guidelines for Manufactured Product.
- B. Provide Manufacturer's registered (numbered) Limited Material Warranty certificate for the Manufactured Product installed (refer to section 1.7).

1.3.4 Maintenance Material Submittals

- A. It is always recommended to purchase a small amount of extra material from the original dye lot used, for the purpose of facility operations and maintenance. As needed, purchase an extra box of stair treads and risers and/or safely store any remaining stair tread and risers from the installation and keep them as attic stock for potential future use.

1.4 QUALITY ASSURANCE

- A. Manufacturer must be certified ISO 9001 and ISO 14001.
- B. Manufactured Product must have undergone a vulcanization process; factory lamination should not be accepted as equivalent.
- C. In accordance with ASTM E648, the Manufactured Product must have a critical radiant flux $\geq 0.45 \text{ W/cm}^2$ (Class 1).
- D. In accordance with ASTM E662, the Manufactured Product must have an optical density of smoke ≤ 450 .
- E. Flooring Contractor to be recognized and approved by the Manufacturer.
- F. Flooring Contractor must be fully acquainted with the existing facility and utilities and must fully understand the difficulties and restrictions attending the execution of the work under contract; Flooring Contractor must immediately advise the Owner, in writing, upon discovery of any restrictions or anticipated difficulty.
- G. Installer must be approved by the Flooring Contractor and must have performed installations of the same scale in the last three (3) years.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Products Supplied must be delivered in Manufacturer's original, unopened, and undamaged packaging with identification labels intact.
- B. Products Supplied must be protected from exposure to harmful weather conditions and must be safely stored on a clean, dry, flat surface. Store stair treads and risers, as well as landing tiles if they were specified, on a flat surface, carefully protecting corners and edges. Do not double-stack pallets.
- C. Climate controlled storage is recommended. Storage temperature must not be below 40°F (4°C) and must not exceed 100°F (38°C). Materials must be delivered to site a minimum of 24 hours before work is scheduled to begin so that they can acclimate.
- D. Avoid storing Manufactured Product for extended periods of time to avoid damage.
- E. Products Supplied need not suffer damage during delivery, storage, and handling (e.g., dents, scratches, excessive compression or warping, chipped edges, etc.); do not use a damaged product.

1.6 SITE CONDITIONS

- A. The GC is responsible for ensuring that all site conditions meet the requirements of the Manufacturer. Refer to the current copy of ASTM F710 for additional information.
- B. No sealers or curing compounds are applied to or mixed into the concrete (refer to CSI/CSC Section 03 05 00 – Common Work Results for Concrete of Division 3).
- C. Installation of the stair treads and risers to be carried out no sooner than the specified curing time of the concrete (normal density concrete curing time is approximately 28 days for development of design strength, having a minimum 3500 psi or 25 MPa in compressive strength).
- D. Concrete substrate must be dry, flat, sufficiently porous, smooth, clean, and free of bond inhibitors (paint, wax, dust, oil or grease, sealer or curing agent, surface hardener, solvent, asphalt, old adhesive residues, etc.). Concrete surfaces that are powdery or scaly are not acceptable. Bond inhibitors are to be mechanically removed (e.g., light to medium shot-blasting for ICRI CSP #3 to #5). Do not use abatement

chemicals; these chemicals can be absorbed by the concrete and prevent adhesion. Flooring Contractor must be advised, in writing, of any bond inhibitor having been removed so that removal effectiveness can be verified with a mat bond test. Refer to current published copy of ASTM F3311.

- E. Concrete substrates must be dry and free of any moisture problem. Moisture and pH tests must be performed on all concrete substrates (refer to section 3.2, H). Never attempt substrate moisture testing and flooring installation until the jobsite's ambient conditions (ambient temperature and ambient relative humidity) are constant and representative of the building's operating conditions. **WARNING: Failure to provide stable ambient conditions on the jobsite will produce inaccurate moisture testing results, in addition to negatively impacting the adhesive's cure and the flooring system's performance.** Turn on the heating, ventilation, and air-conditioning (HVAC) unit 7 days prior to performing moisture tests, to ensure accurate test results and stable ambient conditions for the installation of the stair treads and risers. The GC is responsible for maintaining room and base temperatures stable prior to moisture testing, during moisture testing, prior to flooring installation, during the installation, and as well as a minimum of 48 hours after the complete flooring installation. The acceptable ambient temperature range is between 65°F and 86°F (18°C and 30°C), respecting a limit of no more than ±5°F (±3°C) for any fluctuation, and the acceptable ambient relative humidity range is between 35% and 55%. Always ensure that the substrate's surface temperature remains a minimum of 10°F (5°C) above the dew until 72 hours after the stair treads and risers have been completely installed.
- F. Installation of stair treads and risers will not commence until the building is enclosed and all other trades have completed their interior work. The GC is responsible for maintaining a secure and clean working area before, during, and after the completed installation.
- G. Wherever stair treads and risers could be exposed to direct sunlight, preserve the integrity of the flooring system's components by ensuring proper UV protection is in place. For optimal lifespan, ensure that glass doors, glass façades, and windows are fitted with low-e glass (low emissivity) that blocks 99% of harmful rays.

1.7 LIMITED MATERIAL WARRANTY

- A. The stair treads and risers are warranted to be free from manufacturing defects for a period of ten (10) years from the date of invoice from Mondo, per the terms and conditions of Mondo's current published Limited Material Warranty.
- B. The stair treads and risers are warranted against excessive wear under normal usage in recommended applications for a period of ten (10) years from the date of invoice from Mondo, per the terms and conditions of Mondo's current published Limited Material Warranty.
- C. The Resilient Nosing is warranted to be free from cracking for a period of five (5) years from the date of invoice from Mondo, per the terms and conditions of Mondo's current published Limited Material Warranty.
- D. Refer to current published copy of Mondo's Limited Material Warranty for all terms and conditions, which shall be obtained directly from Mondo. In no event shall any warranties provided by any third parties, including but not limited to distributors, insurance and/or private label providers, etc., be considered as valid.

2 PART 2 – PRODUCTS

2.1 MANUFACTURED PRODUCT

2.1.1 Manufacturer

- A. Mondo America Inc., 2655 Francis-Hughes Avenue, Laval, QC, H7L 3S8, Canada.

2.1.2 Description

Note to Specifier: Specify required color(s) and format(s).

- A. Mondostep-S is prefabricated resilient rubber stair treads and risers, type TS (vulcanized thermoset rubber per ASTM F2169), with a base of natural and synthetic rubbers, stabilizing agents, and pigmentation, as manufactured by Mondo.
- B. Health and The Environment: This product is free from red listed ingredients (2022 LBC Red List CASRN Guide). Mondostep-S complies with CDPH v1.2-2017 (CA Section 01350).
- C. Thickness (ASTM F386): 0.275" (7 mm) at tread; 0.126" (3.2 mm) at transition.
- D. Colors: Provided in six (6) standard solid colors (Coffee, Stone, Silver, Steel, Ebony, and Black).
- E. Surface Texture: Hammered.
- F. Available Dimensions: 4' x 13" (1.22 m x 0.33 m) and 6' x 13" (1.83 m x 0.33 m).

2.1.3 Performance

- A. Manufactured Product tested following standard specifications ASTM F2169 (resilient stair treads).
- B. Performance of the Manufactured Product to conform to the following criteria:

Performance Criterion	Test Method	Requirement*	Result**
Slip Resistance (Dry, Leather Heel)	ASTM C1028	≥0.5	Compliant
Slip Resistance (Dry, Neolite Heel)	ASTM C1028	≥0.6	Compliant
Durometer Hardness (Shore A)	ASTM D2240	≥85	Compliant (ASTM F2169 Grade 1)
Critical Radiant Flux	ASTM E648	≥0.45 W/cm ² (Class 1)	≥0.45 W/cm ² (Class 1)
Optical Density of Smoke	ASTM E662	≤450	≤450
Resistance to Chemicals***	ASTM F925	≤Slight Change	Compliant
Static Loading (Tested at 250psi)	ASTM F970	≤0.005 in	Compliant
Heat Resistance	ASTM F1514	ΔE ≤8.0	Compliant
Indoor Air Quality: CA section 01350	CDPH v1.2-2017	-	TVOC 0.5-5.0 mg/m ³

**For each individual test, the manufactured product is only required to meet any applicable requirement listed in the Requirement column.*

***A specific result obtained from a test during a production quality control and/or a third-party test can vary between production lots, laboratories, methods and/or equipment. As such, any specific result listed in the Result column does not constitute representation or warranty as to any particular production lot. Mondo reserves the right to modify product design and/or specifications at any time without notice.*

****For the complete list of chemicals tested, concentrations and contact time, please communicate with Mondo's Technical Department.*

2.1.4 Limitations

- A. Mondostep-S is not designed for unglued/loose lay, partially glued or temporary applications; stair tread and risers must always be fully adhered to the substrate's surface using a Manufacturer recommended adhesive or approved tape system that has been fully applied to the edge of the material.

2.1.5 Materials

- A. Stair treads and risers: manufactured according to section 2.1.2 Description.

2.2 ACCESSORIES

Note to Specifier: Specify accessories in accordance with project requirements and, when applicable, indicate color.

- A. Prefabricated vulcanized rubber tile for stair landing. Thickness: 3.2 mm. Size: 18 1/8" x 18 1/8" (46 cm x 46 cm).
- B. 2-in (0.50 mm) tactile indicator strips for the visually impaired, available in highly visible contrasting or non-contrasting colors; coordinate contrasting colors when required to meet regulations.
- C. Adhesive recommended by Manufacturer for wet-lay application: Mondo PU 300 (polyurethane). For suitability, recommendations, and use, please refer to Manufacturer's current published TDS.
- D. Tape system approved by Manufacturer for pressure-sensitive application: heavy-duty, double-sided acrylic tape with fiberglass scrim, compatible with rubber stair treads and risers, such as Premier Grip™ or Roberts Max Grip®. For suitability, recommendations, and use, please refer to the selected product manufacturer's current published product documentation.

3 PART 3 – EXECUTION

3.1 INSTALLERS

- A. Refer to section 1.4 of this document for information on installers.

3.2 EXAMINATION

Note to Specifier: The following must be ensured prior to installation of stair treads and risers.

- A. Prior to installation, Flooring Contractor must verify that the substrate surface is ready to receive resilient stair treads and risers and that it has been adequately prepared according to Manufacturer's current published substrate surface preparation manual. Refer to the current copy of ASTM F710 for additional information.
- B. Verify that no concrete sealers or curing compounds have been applied to or mixed into the concrete (refer to CSI/CSC Section 03 05 00 – Common Work Results for Concrete of Division 3).
- C. Verify that concrete has been allowed a minimum of 28 days of curing time (normal density concrete curing time is approximately 28 days for development of design strength, having a minimum 3500 psi or 25 MPa in compressive strength).
- D. Verify that concrete surface is free of bond inhibitors (paint, wax, dust, oil or grease, sealer or curing agent, surface hardener, solvent, asphalt, old adhesive residues, etc.). Concrete surfaces that are powdery or scaly are not acceptable. Bond inhibitors are to be mechanically removed (e.g., light to medium shot-blasting for ICRI CSP #3 to #5). Do not use abatement chemicals; these chemicals can be absorbed by the concrete and prevent adhesion. Always confirm removal effectiveness with a mat bond test. Refer to current copy of ASTM F3311.
- E. Imperfections and irregularities (holes, voids, bumps, cracks, depressions, etc.) must be corrected, and surfaces must be smooth and even before proceeding with the installation. Only use high quality Portland

cement based patching and leveling compounds, respecting the manufacturer's instructions for compatibility and use with resilient flooring products and accessories.

- F. Concrete substrates must be dry and free of any moisture problem. Verify concrete substrate's moisture and pH; tests must be performed on all concrete substrates, under in-service conditions, and preferably by a third party. For accurate test results, ensure that the HVAC unit has been operational for 7 days and that the ambient conditions are stable, prior to performing any moisture and pH tests. The concrete's surface pH must be between 7 and 10, measured using a pH meter with flat surface electrode. Moisture vapor emissions from the concrete slab must not exceed the tolerance of the adhesive specified, in accordance with the current published copy of ASTM F1869 (anhydrous calcium chloride). Where tolerances are exceeded and a moisture mitigation system will be specified, refer to current published copy of ASTM F3010. Moisture and pH test results must be recorded, keeping copies for a minimum of 3 years or for the duration of the Limited Material Warranty period.
- G. Ensure room and substrate temperatures remain stable prior to moisture testing and installation, during the installation, as well as a minimum of 48 hours after the stair treads and risers have been completely installed. The acceptable ambient temperature range is between 65°F and 86°F (18°C and 30°C), respecting a limit of no more than ±5°F (±3°C) for any fluctuation, and the acceptable ambient relative humidity range is between 35% and 55%. Always ensure that the substrate's surface temperature remains a minimum of 10°F (5°C) above the dew until 72 hours after the stair treads and risers have been completely installed.
- H. Installer to perform bond tests with specified products to confirm suitability and strong adhesion to all substrates, according to ASTM F3311 (mat bond evaluation). Special attention must be paid to any area where a contaminant was removed, confirming removal effectiveness. For additional notes on bond tests, refer to Manufacturer's current published substrate surface preparation manual.

3.3 PREPARATION

Note to Specifier: The surface of the concrete stairs must be prepared in accordance with Manufacturer's current published guidelines; it is recommended that the Specifier review said guidelines from the Manufacturer. A copy of the Manufacturer's substrate surface preparation manual may be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138). This guide provides common practices for the preparation and verification of substrates that will be receiving resilient flooring materials, and as such should not be omitted or altered in any case.

- A. Prepare the substrate's surface in accordance with Manufacturer's current published guidelines.

3.4 INSTALLATION

Note to Specifier: Products Supplied are to be installed in accordance with the Manufacturer's current published guidelines; it is recommended that the Specifier review said guidelines from the Manufacturer. Copies of all installation manuals for Products Supplied may be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138). Installation procedures may be altered to accommodate special project needs, as deemed necessary by the Specifier, and after consulting the Technical Department at Mondo America, Inc. to ensure suitability.

- A. Install stair treads and risers in accordance with Manufacturer's current published guidelines.
- B. Install all accessories in accordance with Manufacturer's current published guidelines.

3.5 REPAIR

- A. For best results, repair material should come from the same original dye lot as initially installed stair treads and risers (refer to section 1.3.4).
- B. Repairs are only to be performed by Flooring Contractor's qualified Installer or by a Specialized Technician authorized by the Manufacturer.

3.6 CLEANING

Note to Specifier: A copy of the maintenance manual for the stair treads and risers may be obtained from the Technical Department at Mondo America, Inc. (United States 1-800-361-3747 • Canada 1-800-663-8138).

- A. Always wait a minimum of 72 hours after the stair treads and risers have been completely installed before performing the initial wash.
- B. Always maintain the stair treads and risers following Manufacturer's current published guidelines.

3.7 PROTECTION

- A. As needed, protect stair treads, and landings when applicable, with pieces of 1/8" Masonite during and after the installation, prior to final inspection and acknowledged completion of work by Owner.
- B. Protect the installation from direct UV exposure (refer to section 1.6, k).

END OF SECTION