

Product Description

Roppe Raised Design rubber stair treads, risers and stringers are specifically designed for use on all interior stairs, including pan-filled concrete and wood substrates. Roppe Raised Design are vulcanized and compression-molded from a high-grade synthetic rubber compound that is solid, homogeneous and durable. Roppe offers a variety of

options within the Raised Design product line, including treads with abrasive, smooth or ribbed inserts in a multitude of standard colors and the option to customize colors and color combinations. Raised Design stair treads are ideal for indoor use in most commercial or industrial applications, such as schools, hospitals, department stores, government buildings, hotels,

dormitories, sports complexes, airport terminals, shopping malls and any other public or private building.

Features

- **PVC Free**
- **Does Not Require A Finish**
- **Extremely Durable**
- **ADA Compliant**
- **Optimized For Visually Impaired**
- **Excellent Chemical Resistance**
- **Excellent Slip Resistance**
- **Recyclable** (*IMPACT Recycling Program*)
- **Qualifies for LEED® Credits**
- **FloorScore® Certified**

Technical Data

LEED v2009 IEQ Credit 4.1: **Qualifies**

LEED v2009 IEQ Credit 4.3: **Qualifies**

ASTM F2169 - Resilient Stair Treads: **Type TS, Class 1 & 2, Group 1 & 2, Grade 1**

ASTM E648 (NFPA 253) - Critical Radiant Flux: **Class I, > 0.45 W/cm²**

ASTM E662 (NFPA 258) - Smoke Density: **Passes, <450**

CAN/ULC-S102.2 - Surface Burning: **FSR 115, SDS 275**

ASTM F925 - Chemical Resistance: **Passes** (*see chart*)

ASTM D2047 - Slip Resistance: **> 0.6**

ASTM F1514 - Heat Stability: **Passes**

Acclimation Time: **48 Hours**

Storage & Acclimation Temperature: **65° - 85° F**

Additional Information

Approved Adhesives

AW-510 Acrylic Wet-Set Adhesive
 EN-610 Epoxy Nose Filler Adhesive
 C-630 Contact Adhesive
 TP-620 Pressure Sensitive Tape
 MS-700 Modified Silane Adhesive
 EW-710 Epoxy Wet-Set Adhesive

Availability, Cost & Samples

Roppe Flooring products are sold through distribution. To locate the nearest distributor, visit roppe.com or send an e-mail to support@roppe.com.

Technical Documents & Support

Additional product resources and technical documents are available online at roppe.com. For additional technical support, send an e-mail to solutions@rhctechical.com.

Diamond Treads

#30 Diamond Square Nose Tread

Nose Type: **Square w/ Taper & Relief Cut**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **3/16" (4.76 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12" (304.8 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m),
 84" (2.13 m), 96" (2.44 m),
 108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#631 Diamond Landing Tile**
 Weight Per Lineal Foot: **2.25 lbs.**
 Treads Per Carton: **6 (4 for all treads over 72")**

#31 Diamond Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/16" (4.76 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#631 Diamond Landing Tile**
 Weight Per Lineal Foot: **2.25 lbs.**
 Treads Per Carton: **6**

Abrasive Strip Treads

#40 Heavy-Duty Abrasive Strip Square Nose Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/16" (4.76 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 Safety Strip Width: **Two 3/4" (19 mm) inserts**
 Safety Strip Spacing: **~3/4" From Nose,
 1 1/4" (31.75 mm) Between**
 Safety Strip Material: **Carborundum**
 Coordinating Landing Tile: **#969 3/16" Smooth Marble (#40)**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6**

#41 Heavy-Duty Abrasive Strip Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/16" (4.76 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 Safety Strip Width: **Two 3/4" (19 mm) inserts**
 Safety Strip Spacing: **~3/4" From Nose,
 1 1/4" (31.75 mm) Between**
 Safety Strip Material: **Carborundum**
 Coordinating Landing Tile: **#969 3/16" Smooth Marble**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6**

#50 Light-Duty Abrasive Strip Square Nose Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **3/16" (4.76 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 Safety Strip Width: **Two 3/4" (19 mm) inserts**
 Safety Strip Spacing: **~3/4" From Nose,
 1 1/4" (31.75 mm) Between**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#970 1/8" Smooth Marble**
 Weight Per Lineal Foot: **1.5 lbs.**
 Treads Per Carton: **10**

#51 Light-Duty Abrasive Strip Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **3/16" (4.76 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 Safety Strip Width: **Two 3/4" (19 mm) inserts**
 Safety Strip Spacing: **~3/4" From Nose,
 1 1/4" (31.75 mm) Between**
 Safety Strip Material: **Carborundum**
 Coordinating Landing Tile: **#969 3/16" Smooth Marble**
 Weight Per Lineal Foot: **1.5 lbs.**
 Treads Per Carton: **10**

Smooth Treads

#60 Smooth Heavy-Duty Square Nose Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/16" (4.76 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#671 3/16" Smooth Landing Tile
#976 3/16" Smooth Marble**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6**

#61 Smooth Heavy-Duty Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/16" (4.76 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#671 3/16" Smooth Landing Tile
#976 3/16" Smooth Marble**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6**

#70 Smooth Light-Duty Square Nose Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/8" (3.2 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 3/8" (314.32 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum**
 Coordinating Landing Tile: **#671 3/16" Smooth Landing Tile
#976 3/16" Smooth Marble**
 Weight Per Lineal Foot: **1.5 lbs.**
 Treads Per Carton: **10**

#71 Smooth Light-Duty Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **1/8" (3.2 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 3/8" (314.32 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum**
 Coordinating Landing Tile: **#671 3/16" Smooth Landing Tile
#976 3/16" Smooth Marble**
 Weight Per Lineal Foot: **1.5 lbs.**
 Treads Per Carton: **10**

Ribbed Treads

#80 Ribbed Light-Duty Square Nose Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/8" (3.2 mm)**
 Back Edge Thickness: **5/64" (2 mm)**
 Tread Depth: **12 1/4" (311.15 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **N/A**
 Weight Per Lineal Foot: **1.25 lbs.**
 Treads Per Carton: **10**

#81 Ribbed Light-Duty Round Nose Tread

Nose Type: **Round**
 Nose Length: **1 3/8" (34.93 mm)**
 Leading Edge Thickness: **1/8" (3.2 mm)**
 Back Edge Thickness: **5/64" (2 mm)**
 Tread Depth: **12 1/4" (311.15 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **N/A**
 Weight Per Lineal Foot: **1.25 lbs.**
 Treads Per Carton: **10**

Profiled Treads

#92 Low Profile Raised Circular Design Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **3/16" (4.76 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 1/2" (317.5 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#992 Low Profile Circular Design**
 Weight Per Lineal Foot: **1.5 lbs.**
 Treads Per Carton: **6**

#93 Textured Design Tread

Nose Type: **Square w/ Taper**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **13/64" (5.15 mm)**
 Back Edge Thickness: **7/32" (5.5 mm)**
 Tread Depth: **12 5/8" (320.6 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m),
 84" (2.13 m), 96" (2.44 m),
 108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#993 Textured Design**
 Weight Per Lineal Foot: **2 lbs.**
 Treads Per Carton: **6 (4 for all treads over 72")**

#94 Raised Square Design Tread

Nose Type: **Square**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m),
 84" (2.13 m), 96" (2.44 m),
 108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#994 Raised Square Design**
 Weight Per Lineal Foot: **2.2 lbs.**
 Treads Per Carton: **6**

#99 Hammered Design Tread

Nose Type: **Adjustable Square**
 Nose Length: **2" (39.69 mm)**
 Leading Edge Thickness: **13/64" (5.15 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 5/16" (312.26 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m),
 84" (2.13 m), 96" (2.44 m),
 108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#995 Hammered Design**
 Weight Per Lineal Foot: **2 lbs.**
 Treads Per Carton: **6 (4 for all treads over 72")**

Vantage Treads

#97 Vantage Design Extended Length Tread

Nose Type: **Square w/ Taper & Relief Cut**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **3/32" (2.38 mm)**
 Tread Depth: **15" (381 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#996 Vantage Design**
 Weight Per Lineal Foot: **2 lbs.**
 Treads Per Carton: **6**

#98 Vantage Design Tread

Nose Type: **Square w/ Taper & Relief Cut**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **3/16" (4.76 mm)**
 Back Edge Thickness: **1/8" (3.2 mm)**
 Tread Depth: **12 1/16" (306.38 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
 48" (1.22 m), 54" (1.37 m),
 60" (1.52 m) 72" (1.83 m),
 84" (2.13 m), 96" (2.44 m),
 108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#996 Vantage Design**
 Weight Per Lineal Foot: **2 lbs.**
 Treads Per Carton: **6 (4 for all treads over 72")**

One-Piece Tread & Riser

#95 Hammered Design Tread & Riser

Nose Type: **Square w/ Taper**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **13/64" (5.15 mm)**
 Back Edge Thickness: **5/64" (2 mm)**
 Tread Depth: **20 5/8" (523.87 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#995 Hammered Design**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6**

#96 Vantage Design Tread & Riser

Nose Type: **Square w/ Taper & Relief Cut**
 Nose Length: **1 9/16" (39.69 mm)**
 Leading Edge Thickness: **1/4" (6.35 mm)**
 Back Edge Thickness: **5/64" (2 mm)**
 Tread Depth: **20 7/16" (519.12 mm)**
 Tread Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m),
84" (2.13 m), 96" (2.44 m),
108" (2.74 m)**
 (Optional) Safety Strip Width: **One 2" (50.8 mm) insert**
 Safety Strip Spacing: **~3/4" (19 mm) From Nose**
 Safety Strip Material: **Carborundum, Ribbed or Smooth**
 Coordinating Landing Tile: **#996 Vantage Design**
 Weight Per Lineal Foot: **2.5 lbs.**
 Treads Per Carton: **6 (4 for all treads over 72")**

Risers & Stringers

Risers (RSR)

Height: **7" (177.8 mm)**
 Thickness: **.100" (2.5 mm)**
 Toe Length: **9/16" (14.28 mm)**
 Riser Length: **36" (.91 m), 42" (1.07 m),
48" (1.22 m), 54" (1.37 m),
60" (1.52 m) 72" (1.83 m),
84" (2.13 m), 96" (2.44 m),
108" (2.74 m)**
 Weight Per Lineal Foot: **0.63 lbs.**
 Risers Per Carton: **20**

Stringers (STR)

Height: **10" (254 mm)
12" (304.8 mm)**
 Thickness: **0.080" (2mm)**
 Stringer Length: **72" (1.83 m)**
 Weight Per Stringer: **4.5 lbs. (10")
5.1 lbs. (12")**
 Stringers Per Carton: **12**

1. PRE-INSTALLATION CHECKLIST

- Consult all associated product literature concerning adhesive installation, maintenance and warranty prior to installation of flooring.
- Allow all trades to complete work prior to installation.
- Deliver all materials to the installation location in its original packaging with labels intact.
- Do not stack pallets to avoid damage.
- Remove any plastic and strapping from product after delivery.
- Inspect all material for proper type, color and matching lot numbers if appropriate.

- Ensure that all adhesives intended for installation are approved for use with stair tread, riser and/or stringer material.
- Ensure installation area and material storage temperatures are between 65° F (19° C) and 85° F (30° C) for at least 48 hours before, during and after installation.
- Ensure HVAC system is operational and fully functioning at normal operating conditions.
- Protect installation area from extreme temperature changes, such as heat and freezing, as well as direct sunlight for at least 48 hours before, during and after installation.
- Ensure all substrate preparation

and moisture testing requirements have been performed, read and/or understood by all interested parties.

- Do not proceed with installation until all conditions have been met.

2. PRODUCT LIMITATIONS

Do not install materials over LVT, cushioned vinyl, hardwood flooring, cork, rubber, or asphaltic materials. Do not install stair tread materials in outdoor areas, residences, in or around commercial kitchens or areas that may be exposed to animal or vegetable fats and oils, grease and petroleum-based hydrocarbons. Do not install in areas that may be subjected to sharp, pointed objects, such as stiletto heels, cleats or spikes. Do not allow product

to be directly exposed to extreme heat sources, such as radiators, ovens or other high-heat equipment. May be susceptible to staining from harsh disinfectants, cleaning agents, dyes or other harsh chemicals - ensure all chemicals and materials that may come in contact with stair treads, risers or stringers will not stain, mar or otherwise damage the material prior to use.

3. SUBSTRATE PREPARATION

All substrates must be prepared according to ASTM F710, as well as applicable ACI and RFCI guidelines. Substrates must be clean, smooth, permanently dry, flat, and structurally sound. 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.

All substrates must have any and all existing adhesives, materials, contaminants or bond-breakers mechanically removed via scraping, sanding or grinding. Mechanical preparation must expose at least 90% of the original substrate. Following cleaning and removal, all substrates must be vacuumed with a flat vacuum attachment or damp mopped with clean, potable water to remove all surface dust. Sweeping without vacuuming or damp mopping will not be acceptable.

All porous substrates must be tested per ASTM F3191 to confirm porosity. Use a pipette or equivalent to conduct three tests by placing a .05 mL (1/4" wide) droplet of clean, potable water onto the surface. If the substrate absorbs water within 60 seconds, the substrate is considered porous. Conduct 3 tests for the first 3000 sq. ft. and one for each additional 2000 sq. ft., at least one per room. All other substrates that do not meet this requirement are considered non-porous. Ensure that all non-porous substrates are not contaminated with any aforementioned contaminants.

It is recommended that all substrates have a floor flatness of FF32 and/or a flatness tolerance of 1/8" in 6' or 3/16" in 10'. Substrates that do not meet this requirement should have a compatible cementitious patch (such as the Excelsior CP-300) or self-leveling underlayment (such as the Excelsior SU-310) installed to flatten the installation area.

Do not use solvent/citrus based adhesive removers prior to installation. Follow The Resilient Floor Covering Institute's (RFCI) "Recommended Work Practice for Removal of Existing Floor Covering and Adhesive", and all applicable local, state, federal and industry regulations and guidelines. When removing asbestos and asbestos containing materials, follow all applicable OSHA standards.

CONCRETE SUBSTRATES

All concrete must have a minimum compressive strength of 3500 PSI and be prepared in accordance with ASTM F710. When flooring is being installed directly over concrete, concrete surfaces that have an ICRI Concrete Surface Profile (CSP) over 4 should be flattened with a self-leveling underlayment or a patch to prevent imperfections from telegraphing through flooring materials. On or below grade concrete must have a permanent, effective moisture vapor retarder installed below the slab.

Adhesive RH Limits

- AW-510 Acrylic Wet-Set: **90% RH**
- TP-620 Tape Adhesive: **80% RH**
- C-630 Contact Adhesive: **85% RH**
- MS-700 Modified Silane: **95% RH**
- EW-710 Epoxy Wet-Set: **90% RH**

New or existing concrete substrates on all grade levels must be tested in accordance with ASTM F2170, using in situ Probes, to quantitatively determine the amount of relative humidity no more than one week prior to the installation.

If ASTM F2170 test results exceed the prescribed limits, a moisture mitigation product, such as Excelsior MM-100 Moisture Mitigation, must be installed prior to proceeding with installation.

Install The MM-100 per technical data sheet at a rate of 400 sq. ft. per gallon. When installing over concrete as moisture mitigation, material must be applied in two coats. Do not install flooring until moisture testing has been conducted per the appropriate standard and/or moisture mitigation has been installed and is dry to the touch. Do not install flooring in below grade areas when hydrostatic pressure is visible or suspected.

RESINOUS SUBSTRATES

When installing directly over a resinous products, such as the Excelsior MM-100 or an epoxy coating, ensure that coating is dry to the touch and has cured for the prescribed length of time. Substrate must be clean, dry, sound and free of contaminants. Ensure to follow installation procedures and trowel sizes for non-porous substrates.

GYPHUM BASED SUBSTRATES

Gypsum-based substrates must have a minimum compressive strength of 3500 PSI. Gypsum substrates that do not meet this requirement must have one coat of the Excelsior MM-100 or equivalent installed to improve the tensile/pull-off strength of the substrate. Substrate must be structurally sound and firmly bonded to subfloor. Any cracked or fractured areas must be removed and repaired with a compatible patch or repair product. Follow instructions for installation over a gypsum substrate. New or existing gypsum substrates may require a sealant or primer. Follow all manufacturer's recommendations regarding preparation for resilient flooring installation.

WOOD SUBSTRATES

Wood substrates must be constructed per federal, state and/or local building codes. Wood substrates should have a minimum thickness of 1". If plywood is being used, ensure plywood is Underlayment Grade with a minimum thickness of 1/4" and is fully sanded prior to installation. When stairs may be subjected to moisture, use an APA approved exterior grade plywood.

Other wood materials, such as OSB, lauan, particleboard, chipboard,

fiberboard or cementitious tile backer boards, are not acceptable substrates. Avoid preservative-treated and fire-retardant plywood, as some may be manufactured with resins or adhesives that may cause discoloration or staining of materials. Do not install stair treads, risers or stringers directly over solid or engineered hardwood flooring without first installing plywood or a suitable cementitious repair product at a minimum thickness of 1/4" over the hardwood flooring.

Wood substrate deflection, movement, or instability may cause stair tread installations to release, buckle or become distorted. As such, do not use plastic or resin filler to patch cracks. Do not use cement or rosin coated nails and staples or solvent-based construction adhesives to adhere the plywood. Do not install on a sleeper system (wood subfloor system over concrete) or directly over Sturd-I-Floor panels.

METAL SUBSTRATES

Metal substrates must be thoroughly sanded/ground and cleaned of any residue, oil, rust and/or oxidation. Substrate must be smooth, flat and sound prior to installation. When installing in areas that may be subject to topical water or moisture and/or high humidity, an anti-corrosive coating must be applied to protect metal substrate. Contact a local paint or coating supplier for coating recommendations. Install stair treads within 12 hours after sanding/grinding to prevent re-oxidation. Any deflection in the metal floor can cause a bond failure between the adhesive and the metal substrate. Be sure to follow installation procedures and trowel sizes for non-porous substrates.

EXISTING FLOORING SUBSTRATES

The suitability of existing flooring as a substrate depends on the specific requirements of the adhesive being used to install the material. As such, refer to the adhesive requirements for existing flooring substrates and ensure all adhesive requirements and guidelines are followed.

4. CRACKS, JOINTS & VOIDS

All cracks, joints and voids, as well as the areas surrounding them, must be clean and free of dust, dirt, debris and contaminants. All minor cracks and voids 3/64" wide or less may be repaired with a suitable cementitious patch, such as the Excelsior CP-300, or an epoxy filler, such as the Excelsior EN-610.

Due to the dynamic nature of concrete, manufacturer cannot warranty installations to cover cracks or other voids (such as control cuts, saw joints and moving cracks or voids) wider than 3/64". Do not install flooring directly over any crack wider than 3/64".

To treat through cracks (depth at least 75% of the thickness of the concrete), chase joint or crack with a suitable saw or grinder and open to a minimum width of 1/4". Be sure to clean all dust, dirt and debris from crack. Joints and cracks should then be sealed with a suitable, elastomeric caulk (such as Ardex Ardiseal Rapid Plus, Mapei P1 SL or equivalent) designed for use in expansion joints. Install a closed-cell backer rod at prescribed depth and follow caulk manufacturer's instructions for installation. Ensure surface is troweled flush with surface of concrete.

To treat other cracks and voids (such as control cuts, saw-cut joints and surface cracks) over 3/64", chase joint or void with a suitable saw or grinder and clean all dust, dirt and debris from crack. Fill entire crack with a rigid crack filler (such as Ardex Ardifix, CMP CM10 or equivalent) designed for use in control or saw-cut cuts. Follow material manufacturer's instructions for installation. Ensure surface is troweled flush with surface of concrete.

Review all manufacturer installation instructions and/or consult manufacturer technical staff for all crack or joint filling products prior to treating joints and cracks.

5. STRINGER INSTALLATION

Prior to the installation of stair treads and risers, any specified Roppe Stringer or equivalent must be installed (the inclusion of Roppe Stringers is optional). Ensure stringer material has been properly acclimated and that ambient conditions are within normal operational ranges.

Ensure all stringer materials have been cleaned with a clean, damp cloth and denatured alcohol or equivalent solvent-based product prior to installation.

Stringer substrates must be smooth, flat, flush, full and complete for the entire stairwell, in order to provide completed and adequate support for the stringer material. Ensure any minor gaps between steps and stringer substrate are free of any dirt, dust and debris. Ensure substrate is suitably repaired and/or prepared prior to installation, as manufacturer is not responsible for substrates that are inadequate or have not been properly prepared.

Ensure adhesive is approved for use with stringer material and that proper trowel or applicator type and size is used, as manufacturer is not responsible for any and all adhesion issues related to improper adhesive selection or usage. Stringers are designed to be scribed and trimmed on-site by freehand trimming or using a pattern scribing method. Freehand trimming is extremely difficult and should only be attempted by experienced installation technicians.

PATTERN SCRIBE METHOD

Prior to stringer installation, determine the height of the stringer from the top edge of the top and bottom steps. Mark height on stringer substrate and create a chalk line from the top step to the bottom step, ensuring bottom chalk line meets the top of the wall base along the bottom wall. Use a light color chalk to avoid staining substrate.

Using builders felt or equivalent, rough cut a template using the height, width and length of steps. Ensure that the top edge of the template is a factory edge to mimic straight edge of stringer material. Using previously created chalk line, tape the top edge of the template to the top edge of the stringer substrate. Rough cut template material within 1/2" of step, riser and step nose. Cut several triangular holes in the center of the template and tape template to stringer substrate to hold in place while trimming. Template should be flat, flush and must not contain any creases or ripples to ensure that final template is accurate. Carefully trim

template to match step, riser and step nose.

Place the stringer template over the stringer material and mark cut lines using suitable marker. Rough cut using a suitable knife that is intended for resilient flooring materials. All final adjustments must be made prior to installing adhesive. Stringer should be flush with all step surfaces.

Apply adhesive according to instructions for specific product in use. Be sure to follow instructions based on substrate porosity (porous or non-porous). Replace trowels and/or applicators at recommended intervals to maintain proper trowel ridge and spread rate. When installing into adhesive using a wet-set method, avoid disrupting material until adhesive has cured for light foot traffic.

Carefully position stringer to ensure that stringer material is flush with steps. Roll material with a hand roller or equivalent within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Visually inspect installation to ensure that material has not shifted and that adhesive has not been squeezed out of joints or compressed onto surface.

6. STAIR TREAD & RISER PREPARATION

Prior to trimming and installation, confirm material installation pattern per design specifications or work order, especially when installing profiled treads or butting treads. If patterns need to be centered or aligned, ensure that stair treads are long enough to allow for trimming on either side of tread.

Inspect all stair treads and risers prior to trimming or installation to verify that there are no visible defects, damages or excessive shading variations. Some products, colors and textures have latent and acceptable color and shade variations. If there are concerns regarding shade or color variation, do not install material and consult sales representative and manufacturer's technical staff.

Due to natural variances in stairwells and steps, all Raised Design stair tread and riser installations are intended to be

scribed and trimmed on-site to conform to each step, using one of the following scribing methods. Prior to trimming and installation, ensure stair tread nose fits the substrate, especially when installing round nose treads or square nose treads that are not adjustable, as nosing may not conform to steps that are not designed for the specific stair tread in use. Do not install stair treads that do not conform to the substrate or alter the interior stair tread nose to conform to steps, as this could result in premature wear and damage, as well as void any and all expressed or implied warranty. Prior to trimming stair treads and risers, ensure that specified stringer materials are installed and that adhesive has cured for light foot traffic to avoid stringer adhesion issues. When scribing stair treads and risers, start from the bottom of the stairwell to ensure that stair treads and risers are properly trimmed. Be sure to protect stringer materials from sharp edges, such as a sharp edge of a divider, during stair tread and riser trimming and installation.

THREE SIDE SCRIBE METHOD

Determine the center of the stairwell and mark a center line on the riser portion of each step. Determine the center of each stair tread and mark a center line on the back edge of the tread for alignment during trimming and installation. When necessary, rough cut stair treads to within 1/2" - 2" of step dimensions to make scribing and trimming easier.

Align the stair tread to the right side of the step and set divider to the distance between the center mark on the step riser and the center mark on the stair tread. While applying firm pressure to the stringer material with divider, mark the stair tread with the divider to determine scribe line. If using a One-Piece Tread & Riser, scribe the riser portion of the tread as well. Use a suitable knife to trim stair tread along scribe mark and create a slight undercut to ease final installation.

Once the right side of the tread is scribed and trimmed, reposition the stair tread to align to the left side of the step. Reset the divider to the distance between the center mark on the step riser and the

center mark on the stair tread. Use divider to scribe stair treads as before and trim stair tread along scribe mark, creating a slight undercut. Ensure that stair tread fits step snugly against stringers without over-compressing tread material.

To aid in scribing and trimming the back edge of stair treads, a spacer (such as a carpenter's level, 1" x 2" wood or equivalent) is required to set the depth of the tread. Prior to cutting the back edge of the stair tread, measure the depth of the step and the thickness of the spacer. Rough cut stair tread to be at least 1/4" deeper than the step but no deeper than the width of the spacer.

Once the back edge has been rough cut, align stair tread to the back of the step riser above. Insert the spacer between the leading edge of the stair tread and the step nose, ensuring that the spacer and stair tread fit snugly against the step. Set the divider to the exact width of the spacer and scribe the back edge of the stair tread to the step riser. Trim the back edge stair tread along scribe mark, creating a slight undercut to ease installation. Ensure that all sides of the stair tread fit snugly to step while avoiding over-compressing material.

Once the initial step has been scribed and trimmed, the riser should be scribed and trimmed to accommodate imperfections in the step stringers using the Two Side Scribe Method.

TWO SIDE SCRIBE METHOD

Prior to trimming risers, ensure that the stair tread below has been trimmed and fits snugly on the step beneath the riser. Use the previous center mark used when trimming the adjoining stair treads as the center of the stairwell, ensuring that center mark is visible while trimming risers. Determine the center of each riser and mark a center line on the top of the riser for alignment during trimming and installation. When necessary, rough cut riser to within 1/2" - 2" of step dimensions to make scribing and trimming easier.

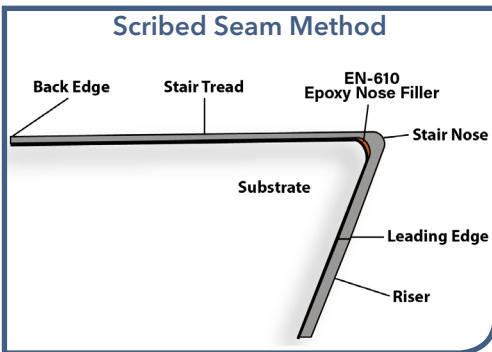
Align the riser to the right side of the step and set divider to the distance between the center mark on the step and the center mark on the riser. While applying firm pressure to the stringer

material with divider, mark the riser with the divider to determine scribe line. Use a suitable knife to trim riser along the scribe mark.

Once the right side of the riser is scribed and trimmed, reposition the riser to align to the left side of the step. Reset the divider to the distance between the center mark on the step riser and the center mark on the stair tread. Use divider to scribe riser as before and trim riser along scribe mark, creating a slight undercut. Ensure that riser fits the step snugly against stringers and stair tread below without over-compressing riser material. Avoid over-compressing toe to avoid premature wear and damage.

The seam between the leading edge of the stair tread and the stair riser should be treated using one of the following methods.

SCRIBED SEAM METHOD

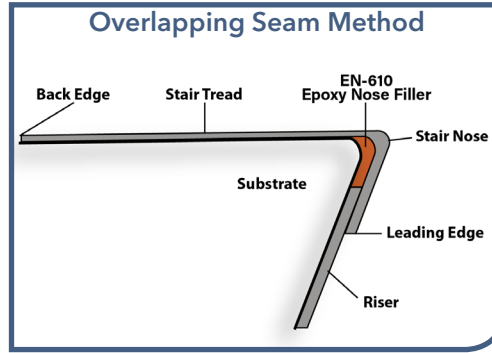


When butting stair tread and riser seams using the Scribed Seam Method, ensure that the stair tread above and below the riser, as well as the riser itself, have been trimmed and fit the step snugly. Ensure the stair tread below the riser is in place prior to scribing the riser to ensure a tight fit to the leading edge of the stair tread above.

Overlap the stair tread above the riser while ensuring that riser toe is not over-compressed. Using the leading edge of the stair tread as a guide, use a divider or a marking tool to scribe the riser. Use a suitable knife to trim riser along the scribe mark.

OVERLAPPING SEAM METHOD

When overlapping stair tread and riser seams, ensure that the stair tread and



riser have been trimmed and fit the step snugly. Risers do not normally require trimming on the top edge prior to installation when overlapping seams. However, if the top edge of the riser extends up to or over the height of the step, trim riser to 1/4" - 1/2" from the top of the step to allow space for the EN-610 Epoxy Nose Filler Adhesive.

7. STANDARD TREAD & RISER INSTALLATION

Ensure step substrate is suitably prepared prior to installation, as manufacturer is not responsible for substrates that have not been properly prepared and tested for moisture. When using the Excelsior TP-620 Pressure Sensitive Tape Adhesive or the C-630 Contact Adhesive, be sure to a clean dusty and/or cementitious substrates with a damp mop or sponge prior to installation to remove dust, dirt and debris.

Ensure adhesive is approved for use with stair tread material and that proper trowel type and size is used, as manufacturer is not responsible for any and all adhesion issues related to improper adhesive selection or usage. Prior to installing adhesive, ensure all stair treads and risers have been trimmed and all stringer materials have been installed. Clean the underside of the stair tread with a clean rag or towel and denatured alcohol or equivalent solvent adhesive remover. **Failure to do so may result in adhesion issues due to mold-release chemical contamination.** Apply adhesive according to instructions for specific product in use. Be sure to follow instructions based on substrate porosity (porous or non-porous). See chart above for reference.

Adhesive Coverage Rates (Per Gallon)

Adhesive	Porous	Non-Porous
AW-510	160 sq. ft.	N/A
EN-610	25 - 50 lin. ft. / Cartridge	
TP-620	164 lin. ft. / Roll	
C-630	20 - 40 sq. ft. / Pail	
MS-700	160 sq. ft.	235 sq. ft.
	Brushed & Rough Porous	Smooth Porous & Non-Porous
EW-710	135 sq. ft.	150 sq. ft.

When installing adhesive on steps, be sure to leave a 1/2" - 3/4" space on either side of step nose to accommodate the Excelsior EN-610 Epoxy Nose Filler Adhesive and avoid adhesive cross-contamination. Prior to installing the stair tread into adhesive, apply a 1/4" - 1/2" bead of the EN-610 to the interior nose of the stair tread. **All stair treads must have the EN-610 installed in the stair nose. Failure to do so may result in premature wear and damage which could compromise egress safety.**

When using the overlapping seam method, use Excelsior TP-620 1" tape to adhere the back side of the stair tread nose to the top of the riser below, in order to provide a tight seam and prevent a possible tripping hazard.

Roll material with a hand roller or equivalent within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Visually inspect installation to ensure that material has not shifted and that adhesive has not been squeezed out of joints or compressed onto surface.

Replace trowels and/or applicators at recommended intervals to maintain proper trowel ridge and spread rate. When installing into adhesive using a wet-set method, avoid walking, kneeling or working on material until adhesive has cured for light foot traffic. **Working on material that is installed into wet adhesive could cause adhesive to displace.** When working off of material is not possible, use a kneeling board or equivalent to disperse weight evenly and prevent adhesive displacement.

Periodically lift material to ensure proper adhesive transfer and ensure adhesive has not surpassed the open time - adhesive should cover 90% of the stair tread and riser. Clean excessive adhesive or adhesive residue from the surface of the material using a clean cloth or mop and a solution of warm water and a pH neutral cleaner. Do not use abrasive or solvent based cleaners.

To prevent movement, dust, dirt, debris and topical moisture in or around seams, tape seams together after installation using a multi-purpose masking tape intended for flooring and hard surfaces. Pay close attention to open times to avoid adhesion issues. This may require installing material in smaller sections.

8. ONE-PIECE TREAD AND RISER INSTALLATION

Ensure step substrate is suitably prepared prior to installation, as manufacturer is not responsible for substrates that have not been properly prepared and tested for moisture. When using the Excelsior TP-620 Pressure Sensitive Tape Adhesive or the C-630 Contact Adhesive, be sure to a clean dusty and/or cementitious substrates with a damp mop or sponge prior to installation to remove dust, dirt and debris. Ensure adhesive is approved for use with stair tread material and that proper trowel type and size is used, as manufacturer is not responsible for any and all adhesion issues related to improper adhesive selection or usage. Ensure all materials have been trimmed and all stringer materials have been installed. Clean the underside of the one-piece tread & riser with a clean rag or towel and denatured alcohol or equivalent solvent adhesive remover. **Failure to do so may result in adhesion issues due to mold-release chemical contamination.** Prior to installing one-piece tread and risers, the Roppe #167 Cove Stick Fillet must be installed at the joint where the back of the step meets the step riser. Install the Cove Stick Fillet using the Excelsior TP-620 1" Tape or the Excelsior C-630 Contact Adhesive. **All one-piece tread & risers must be installed with Cove Stick Fillet. Failure to do so may result in premature wear and**

damage to the tread and or riser.

To ease one-piece tread & riser installation, use the Excelsior TP-620 Pressure Sensitive Tape Adhesive to install material. Use 1" TP-620 tape to adhere tread nose, 4" TP-620 tape to install riser portion and 9 1/2" TP-620 tape to install tread portion. Install TP-620 directly stair tread to ease installation. Be sure to leave a 1/2" - 3/4" space on either side of stair tread nose to accommodate the EN-610 Epoxy Nose Filler Adhesive and avoid adhesive cross-contamination. Prior to installing the stair tread into adhesive, apply a 1/4" - 1/2" bead of the EN-610 Epoxy Nose Filler Adhesive to the interior nose of the stair tread. **Failure to do so may result in premature wear and damage which could compromise egress safety.**

To install stair treads, remove protective paper from TP-620 on the tread nose and stair tread portion of the one-piece tread & riser and install treads onto step. Once the tread and tread nose are properly placed, remove the protective paper from the TP-620 on the riser portion of the one-piece tread & riser and form riser material up the step rise, ensuring there is full contact with the cove stick. If riser does not make full contact with cove stick, the cove area of the one-piece tread & riser could become damaged over time.

To prevent movement, dust, dirt, debris and topical moisture in or around seams, tape seams together after installation using a multi-purpose masking tape intended for flooring and hard surfaces.

Roll material with a hand roller or equivalent within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Visually inspect installation to ensure that material has not shifted during installation. Carefully position riser to ensure that riser is flush with all step surfaces. If using the Scribed Seam Method, ensure that riser fits snugly under the stair tread above without over-compressing material.

Roll material with a hand roller or equivalent within 30 minutes of installation, crossing in a perpendicular direction after initial roll. Visually inspect

installation to ensure that material has not shifted and that adhesive has not been squeezed out of joints or compressed onto surface.

9. BUTTING STAIR TREADS

Extended length steps may require that stair treads be butted together to create a uniform appearance. Prior to installing treads that are intended to be butted together, confirm material installation pattern per design specifications or work order, especially when installing profiled treads. If patterns need to be centered or aligned, ensure that stair treads are long enough to allow for trimming on either side of tread and seam. If possible, try to align seam in line with handrails or other fixtures in order to disguise the seam.

Roppe stair treads have a an acceptable level of thickness variation from tread to tread. For this reason, stair treads that are intended to be butted together may need to be sanded, undercut, or shimmed in order match the thickness of adjacent treads. When butting patterned or profiled stair treads, treads should be trimmed so that the center of the pattern or profile is at the seam.

Butting stair tread installations require more preparation than standard stair tread installation. If stair treads need to be immediately accessible, The Excelsior TP-620 should be used to install treads.

10. INITIAL MAINTENANCE

Ensure that adhesive has cured for recommended period of time prior to conducting initial maintenance. Remove any protective coverings prior to cleaning. Sweep, dust mop and/or vacuum stair tread to remove any dirt, dust or debris.

Mix 2-4 ounces of Excelsior All Purpose Cleaner per gallon of clean, potable water. Use a clean mop to apply cleaning solution to floor and let stand for 5-10 minutes. Use a 22 gauge soft bristled deck brush to scrub stair treads in order to remove dirt, debris and any remaining mold release chemicals. If stair tread is heavily soiled, additional cleaning may be required.

Use a wet vacuum or clean mop to remove any and all excess cleaning

solution. Rinse area with clean, cool water and allow floor to dry entirely.

Do not use detergents, abrasive cleaners or "mop and shine" type products, as they will dull the finish and sheen of the stair tread material. Do not use vacuums that have a beater bar or electric brooms with hard plastic bottoms or no padding, as this may cause discoloration, scratching and loss of sheen.

Installation areas that will be difficult to maintain or will not receive routine maintenance with a scrub brush **must** have a compatible floor finish installed, such as the Excelsior MF-940 or GF-950, in order to ease maintenance of the floor covering.

For further information regarding daily or routine maintenance, please consult the product care & maintenance document or the associated product technical data sheet.

11. FLOORING PROTECTION

Protect newly installed stair treads, risers and stringers with construction grade paper, such as Ram Board, to protect material from damage by other trades. Do not slide or drag heavy equipment across the new stair treads. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect stair treads from scuffing and tearing using temporary floor protection.

Ensure all castors that may come in contact with stair treads are clean and free of any and all dirt and debris. Routinely clean castors to ensure that dirt or debris has not built up or become embedded in castors. Replace castors at regular intervals, especially if they become damaged or heavily soiled.

Place walk-off mats at outside entrances.

Adhesive Traffic Limits	
AW-510 Acrylic Wet-Set	
Light Foot Traffic:	24 Hours
Heavy / Rolling Traffic:	48 Hours
Maintenance:	72 Hours
EN-610 Epoxy Wet-Set	
Foot Traffic:	8-12 Hours
Heavy / Rolling Traffic:	24 Hours
Maintenance:	48 Hours
TP-620 Pressure Sensitive Tape	
Foot Traffic:	Immediate
Heavy / Rolling Traffic:	Immediate
Maintenance:	Immediate
C-630 Contact Adhesive	
Foot Traffic:	Immediate
Heavy / Rolling Traffic:	Immediate
Maintenance:	72 Hours
MS-700 Modified Silane	
Foot Traffic:	8-12 Hours
Heavy / Rolling Traffic:	24-48 Hours
Maintenance:	48 Hours
EW-710 Epoxy Wet-Set	
Foot Traffic:	8-12 Hours
Heavy / Rolling Traffic:	24-48 Hours
Maintenance:	48 Hours

Ensure mats are manufactured with non-staining backs to prevent discoloration.

12. WARRANTY

Roppe provides a 3 Year Limited Warranty on all Light Duty Stair Treads and a 5 year limited warranty on all Heavy Duty Stair Treads. For additional information, see associated warranty documents.

FOR PROFESSIONAL USE ONLY. PLEASE CONSULT ALL ASSOCIATED TECHNICAL DATA SHEETS, SAFETY DATA SHEETS, MAINTENANCE DOCUMENTS AND WARRANTY INFORMATION PRIOR TO INSTALLATION.