

Roppe Raised Design Rubber Floor Tile



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1. Product Nomenclature

Roppe Raised Design Rubber Floor Tile
Vulcanized Homogeneous Rubber Tile

2. Manufacturer

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3. Product Description

3.1 Basic Application

Roppe Raised Design Rubber Floor Tile is vulcanized and homogeneous, and is designed for interior use in high traffic areas. Typical applications include terminals, malls, schools, recreational facilities, public buildings, department stores, elevators, lobbies, and ramps. Available in seven different styles: Slate Design #991, Low Profile Raised Circular #992, Textured Design #993, Raised Square Design #994, #995 Hammered Design, Raised Circular Vantage Design #996, and Warning Tile Design #953. Also available is Roppe's New Dimensions Rubber Tile available in three new exciting designs, Crackle #982, Random #983 and Stripe #984. Warning Tile is designed for use in areas such as stairwell landings to alert the visually impaired to approaching changes in elevation. It meets the guidelines of ANSI-A117.1 1986 Section 4.27 Detectable Warnings, and Title 24. A Lug-Back is available in Vantage Design only. Roppe's Lug-Back Design allows for superior adhesion of the tile to the substrate to withstand extreme stress and shear loads from extra-heavy traffic. Flame Retardant, Antifungal, & Oil and Grease Resistant performance compounds available upon request.

3.2 Product Construction

Roppe Raised Design and Dimensions Rubber Tile is 100% synthetic rubber blended with stabilizing fillers, color pigments, and processing oils. Roppe Raised Design and Dimensions Rubber Tile are non-conductive and resist scuffing, gouging, cigarette scorching, and most chemicals and common substances. Color is inherent throughout the tile. The raised design allows dirt and liquids to drain off, reducing the chances of slippage.



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3.3 Product Type and Dimensions

Raised Design Rubber Floor Tile

Slate Design, Hammered Design, Low Profile Raised Circular Design, Textured Design, Raised Square Design, Raised Circular Vantage Design and Dimensions Rubber Tile (Random, Stripe & Crackle Designs).

- Dimensions : 19 -11/16" (50cm) x 19 -11/16" (50cm) nominal
- Packaging: Sixteen (16) Tile per carton
- Square Feet per Carton: 43 (3.99sq/m)
- Overall Thickness and Approximate Weight per Carton:
 - #982 Dimensions Crackle Design:
 - Approximate Carton Weight: 43lbs (19.50kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)
 - #983 Dimensions Random Design:
 - Approximate Weight: 43lbs (19.50kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)
 - # 984 Dimensions Stripe Design:
 - Approximate Carton Weight: 43lbs (19.50kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)
 - #991 Slate Design:
 - Approximate Carton Weight: 42lbs (19.05kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)
 - #992 Low Profile Raised Circular Design:
 - Approximate Carton Weight: 42lbs (19.05kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm) Tile thickness without profile: 7/64" (2.78mm): Tile thickness with profile 5/45" (2.82mm): Profile thickness: 1/100" (.254mm).
 - #993 Textured Design:
 - Approximate Carton Weight: 43lbs (19.50kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)
 - #994 Raised Square Design:
 - Approximate Carton Weight: 49lbs (22.23kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm) Tile thickness without profile: 1/8" (3.17mm): Tile thickness with profile 9/64" (3.57mm): Profile thickness: 1/45" (.559mm).
 - #995 Hammered Design:
 - Approximate Carton Weight: 43lbs (19.50kg)
 - Overall Nominal Thickness: 1/8" (3.175 mm)



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- #996 Raised Circular Vantage Design:
 - Approximate Carton Weight: 50lbs (22.68kg)
 - Overall Nominal Thickness: Tile thickness without profile: 1/8" (3.16mm): Tile thickness with profile: 5/32" (3.97mm): Profile thickness: 1/32" (.793mm).

3.3.2 #953 Warning Tile Design

- Warning Tile is designed for use in areas such as stairwell landings to alert the visually impaired to approaching changes in elevation. It meets the guidelines of ANSI-A117.1 1986 Section 4.27 Detectable Warnings, and Title 24.
- Overall Nominal Thickness: 1/8" (3.175 mm) Tile thickness without profile: 0.045" (1.27mm): Tile thickness with profile 1/8" (3.16mm): Profile thickness: 0.800" (2.03mm):
- Dimensions: 12" (304.8mm) x 12" (304.8mm) nominal
- Packaging: Forty-five (45) Tiles per carton
- Square Feet per Carton: 45 (4.18sq/m)
- Approximate Weight per Carton: 51.4lbs (23.3kg)

3.3.3 Lug-Back Vantage Design

- Available in Vantage Design only. Our Lug-Back Design allows for superior adhesion of the tile to the substrate to withstand extreme stress and shear loads from extra-heavy traffic.
- Overall Nominal Thickness: Tile thickness without profile: 11/64" (4.36mm): Tile thickness with profile 13/64" (5.16mm): Profile thickness: 1/32" (.793mm).

3.4 Features and Benefits

- PVC Free
- Contains 10% natural rubber, a renewable resource, which may contribute to LEED® Green Building Certification System, and meets CHPS criteria.
- Available in 7 profiles: Slate Design, Low Profile Raised Design, Textured Design, Raised Square Design, Raised Circular Vantage Profile, Hammered and Warning Tile Design. Designed for high durability and ease of maintenance throughout the product life cycle.
- Resists scuffing, gouging and cigarette scorching, as well as most chemicals and common substances.
- Provides underfoot comfort, reduced noise from foot traffic and has an inherent slip resistance.



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- All colors available at a Single Price Point.

4. Technical Data

4.1 Technical & Specification Data

4.1.1 ASTM F-1344, Class 1: Meets

(ASTM F-1344 Required Characteristics and Tests)

Characteristic	Requirement	ASTM Test Method
Hardness	Min 85 Shore A	D-2240
Static Load Resistance	≤ 0.005 in. (0.127mm) @ 250lb. (113.4kg) load	F-970
Short-Term Chemical Exposure:	No more than slight change in surface dulling, Surface attack, or staining.	F-925
Resistance to Heat	Average Delta E not greater than 8.0	F-1514
Abrasion Resistance	Less than 1 gram loss after 1,000 cycles	D-3389
Dimensional Stability	The dimensional change of the rubber floor Tile in both the machine direction (MD) and the Across machine (AMD) shall not exceed 0.15%	F-2199
Thickness	As specified	
Smooth Surface Tile	± 0.005 in. (± 0.127mm)	F-386
Molded Pattern Tile	+ 0.015/-0.005 in. (+0.381 mm/-0.127mm)	F-386
Embossed Pattern Tile	+ 0.015/-0.005 in. (+0.381 mm/-0.127mm)	F-373
Characteristic	Requirement	ASTM Test Method
Size	Up to & including 12 by 12 in = ± 0.016 in (± 0.4mm)	F-2055
	Larger than 12 by 12 in & up to & including 24 by 24 in = ± 0.018 in. (± 0.45mm).	
	Larger than 24 by 24 in = ± 0.020 in. (± 0.5mm)	



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Squareness	Max, 0.005 in (0.127mm) max.	F-2055
Quality of Cut	0.005 in (0.127mm) max.	F-511

F-925 *Resistance to Short-Term Chemical Exposure*—When tested in accordance with Test Method F 925, the rubber floor tile shall have no more than a slight change in surface dulling, surface attack, or staining when exposed to the following chemicals:

- White vinegar (5% acetic acid)
- Rubbing alcohol (70% isopropyl alcohol)
- Sodium hydroxide solution (5% NaOH)
- Hydrochloric acid solution (5% HCl)
- Sulfuric acid solution (5% H₂SO₄)
- Household ammonia solution (5% NH₄OH)
- Household bleach (5.25% NaOCl)
- Disinfectant cleaner (5% active phenol)

(Additional ASTM F-1344 Test)

- 4.1.2 ASTM D-412 Tensile Strength: > 1,200 psi
- 4.1.3 ASTM D-412 Elongation: > 120%
- 4.1.4 ASTM D-2047 Static Coefficient: Rated 0.75 Static Coefficient of Friction; James Machine
- 4.1.5 ASTM E-648 (Fire Resistance), Radiant Panel Test: > 0.45 , Class 1
- 4.1.6 ASTM E-162 Flame Spread: Index of 45
- 4.1.7 ASTM E-84 Flame Spread >75, Smoke Density >400, Class C

4.2 Architects' Material Specifications

Architect's Material Specification - RAISED DESIGN RUBBER FLOOR TILE

Architects' Material Specifications: RAISED DESIGN RUBBER FLOOR TILE

All floors shown in the finish schedule or listed in this specification for heavy traffic areas shall be Roppe's _____ (insert design name) RUBBER TILE, manufactured by Roppe Corporation, Fostoria, Ohio. The tile shall be homogeneously constructed of first-quality resilient rubber compound, and shall conform to ASTM F-1344, Class 1. The tile shall be 19-11/16" x 19-11/16" (50cm x 50cm) size, 1/8" (3.175mm) gauge and in the color _____ (insert color) selected.



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Architects' Material Specifications- DIMENSIONS RUBBER TILE

All floors shown in the finish schedule or listed in this specification for heavy traffic areas shall be Roppe's _____ (insert design name) RUBBER TILE, manufactured by Roppe Corporation, Fostoria, Ohio. The tile shall be homogeneously constructed of first-quality resilient rubber compound, and shall conform to ASTM F-1344, Class 1. The tile shall be 19-11/16" x 19-11/16" (50cm x 50cm) size, 1/8" (3.175mm) gauge size, and in the color _____ (insert color) selected.

Architects' Material Specifications- LUG-BACK RUBBER FLOOR TILE

All floors shown in the finish schedule or listed in this specification for heavy traffic areas shall be Roppe's LUG-BACK RUBBER TILE, manufactured by Roppe Corporation, Fostoria, Ohio. The tile shall be homogeneously constructed of first-quality resilient rubber compound, and shall conform to ASTM F-1344, Class 1. The tile shall be 19-11/16" x 19-11/16" (50cm x 50cm) size, 13/64" (5.16mm) gauge size, and in the color _____ (insert color) selected.

Architects' Material Specifications- WARNING RUBBER FLOOR TILE

All floors shown in the finish schedule or listed in this specification for heavy traffic areas shall be Roppe's WARNING RUBBER TILE, manufactured by Roppe Corporation, Fostoria, Ohio. The tile shall be homogeneously constructed of first-quality resilient rubber compound, and shall conform to ASTM F-1344, Class 1. The tile shall be 12" x 12" (304.8 mm x 304.8 mm) size, 1/8" (3.175 mm) gauge size, and in the color _____ (insert color) selected.

5. Product Limitations/Precautions

Roppe's Slate Design, Low Profile Raised Circular Design, Raised Square Design, and Raised Circular Vantage Design products are manufactured with a "Roppe" installation directional logo on the tile's face & corresponding installation directional arrows located on the tile's backing. All tiles must be installed with the logo & installation directional arrows pointing in the same direction. Roppe's Textured, Smooth Finish and Hammered Designs are manufactured with installation directional arrows located on the tile's backing, and must be installed with the arrows pointing in the same direction. Roppe's Dimensions Tile are not directional. Roppe 12" x 12" tiles do not contain direction logos or installation arrows, and must be installed in the same direction as packaged in the original box. Always dry-lay each floor before beginning to ensure the desired look is achieved, while checking for turned or shaded tile. Notice: It is the Flooring Installer's direct responsibility to inspect and loose lay the flooring in the room or area prior to installation to determine the proper layout and best overall appearance. Flooring Installer must inspect all material for manufacturing imperfections and irregularities prior to installation. All manufacturing imperfections or irregularities must be reported to the appropriate authority. Roppe Raised Design Rubber Tile products must be installed using ROP360 Acrylic Tile & Stair Tread Adhesive, ROP435 Solvent Free Epoxy Flooring Adhesive (excluding metal and flexing substrates) or ROP535U "Universal" Two-Component Urethane Enhanced Epoxy Adhesive each limited to specific applications and substrate types. ROP435 Solvent Free Epoxy Flooring Adhesive or



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ROP535U “Universal” Two-Component Urethane Enhanced Epoxy Adhesive must be used for installations in areas where the flooring will be subjected to lateral shear stresses and/or rolling loads, depending on substrate type. Raised Design Rubber Tile must be installed in accordance with Roppe’s recommendations in order for the product warranty to be in effect. Roppe Rubber Tile can be stained if it is allowed to remain in contact with other rubber products that may contain staining ingredients such as tires, casters, walk-off mats, and walk-off residue from asphalt driveways and sealers. Material Fading & distortion can occur from extensive exposure to heavy direct or glass-filtered sunlight, or unfiltered ultra-violet rays. Excessive heat from non-environmentally controlled areas, glass-filtered or direct sunlight or unfiltered ultra-violet rays can also have an adverse effect on the adhesive also, and should be avoided to prevent adhesive bond failure. Ensure any disinfectant, cleaning agent, dye, floor care product, pesticide, chlorine or other chemical (solid, liquid, or gas) that may come in contact with the flooring will not produce permanent discoloration and/or damage to the flooring. If any chemical that may come in contact with the flooring is not on the stain resistance chart, the rubber must be tested prior to installation. Roppe Rubber Tile is not to be used in commercial kitchens or in areas exposed to animal fats, greases, oils, solvents, strong detergents, or where there is excessive topical moisture. Roppe Rubber Tile must not be used in areas that may be subjected to sharp spikes, cleats, sharp wheels, or other objects that could damage the flooring. DO NOT drag or move objects across the flooring or drop objects onto the flooring that can cause damage to the flooring. Use appropriate floor and furniture protection devices. The flooring is not to come in contact with direct heat, such as radiators, hot ovens, or other heated equipment. Ensure the proper product is used for the service application with regard to type and amount of traffic. Roppe Raised Design Rubber Tile products are for indoor use only with temperatures maintained from 65° F (19°C) to 85° F (30°C). Color selections must be made from actual samples as exact matching of color or shade can vary. Follow all local, state, and federal safety standards and practices.

6. Installation

6.1 General Preparation and Conditioning

Read the literature concerning the product description, product limitations, product installation, adhesive information, product maintenance, and warranty before installing the tile. All materials are to be delivered to the installation location in its original packaging with labels intact. Store products in a dry area protected from the weather on a smooth, flat, dry surface with temperatures maintained between 65° F (19°C) and 85° F(30°C). DO NOT stack pallets. Remove the tile from the cartons and stack evenly on a smooth dry surface with each stack no more than 18” high at least 48 hours prior to installation in order to acclimate. The installation area, substrate, rubber flooring, and adhesive are to be maintained between 65°F (19°C) and 85°F(30°C) for at least 48 hours before installation, during installation, and thereafter. Maintain room temperatures between 65° F (19°C) and 85° F (30°C) thereafter to prevent adhesive failure and to prevent distortion or destruction of the Raised Design Rubber Tile flooring. Notice: The Rubber Tile should be loose laid in the room or area prior to spreading of adhesive to determine the proper layout to ensure the best overall appearance. Inspect all material for proper type and color. Conduct the proper moisture emission and pH testing on the substrate. Proceed with the installation only when the



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conditions are proper and correct. A bond test using the ROP360 Acrylic Tile & Stair Tread Adhesive, ROP435 Solvent Free Epoxy Flooring Adhesive or ROP535U “Universal” Two-Component Urethane Enhanced Epoxy Adhesive throughout the area approximately 50 feet apart should be performed at least one week prior to the scheduled installation to ensure the surface is suitable. After 72 hours, there should be an unusual amount of force to lift the tile flooring from the substrate with adhesive bonding to the tile and the substrate. DO NOT proceed with the installation if the concrete subfloor has darkened, if visual moisture is present or if adhesive is still wet. Each is clear indications of subfloor moisture problems. Close the area to traffic during flooring installation. Install tile and accessories after other finishing operations, including painting, have been completed. Prevent the sanded back of the tile from becoming contaminated and protect the face from damage. If the sanded back of the tile becomes soiled prior to installation, clean with a soft cloth dampened with denatured alcohol. Rubber Tile may be installed over radiant heated floors, provided the surface temperature is maintained between 65°F (19°C) and 85°F (30°C) excluding the use of ROP360 Acrylic Tile & Stair Tread Adhesive. If radiant-heated floors have cooled after installation, a gradual increase in temperature is required to prevent adhesive bond from being adversely affected. Warning: Follow all local, state, and federal standards and practices for the proper removal and disposal of flooring, adhesives, or other materials. Follow all local, state, federal, and manufacturer’s safety standards for the use of all products and equipment.

6.2 Subfloor/Substrate Inspection and Preparation

6.2.1 All subfloors/substrates must be inspected prior to installation. All substrates must be clean, smooth, permanently dry, flat, and structurally sound. The substrate must be free of moisture, dust, sealers, paint, primers, curing compounds, parting agents, residual adhesives, adhesive removers, hardeners, resinous compounds, solvents, wax, oil, grease, asphalt, gypsum compounds, alkaline salts, excessive carbonation or laitance, mold, mildew, any other extraneous coatings, films, materials and all other foreign matter which might interfere/restrict proper adhesive bonding. DO NOT use sweeping compounds, solvents, adhesive removers, or acid etching to clean the substrate. DO NOT install flooring over gypsum-based or plaster based leveling or patching compounds. DO NOT install new floor covering over old floor covering, as the old floor covering may not be adequately bonded, hide possible structural defects, or cause plasticizer migration into the new flooring. In renovation or remodel work, remove all existing *adhesive residue so that 100% of the overall area of the original subfloor/substrate is exposed. Follow The Resilient Floor Covering Institute’s (RFCI) “Recommended Work Practice for Removal of Existing Floor Covering and Adhesive, and all applicable industry, local, state, and federal standards. Care must be taken to analyze the conditions and correct any problems prior to installation. Follow the manufacturer’s recommendations for any patching or underlayment materials, excluding gypsum based or plaster based levelers or patching compounds.* Some previous manufactured asphaltic “cutback” contained asbestos. For removal instructions, refer to the Resilient Floor Covering Institute’s publication “Recommended Work Practices for Removal of Resilient Floor Covering”.



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6.2.2 Concrete substrates on all Grade Levels must be tested in accordance with ASTM F 1869 Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride or ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using *in situ* Probes to quantitatively determine the amount of moisture vapor emission at least one week prior to the installation. **Caution:** ASTM F 1869 or ASTM F 2170 tests cannot predict long-term moisture conditions of concrete slabs. Moisture testing only indicates moisture conditions at the time the tests are performed. Before conducting ASTM F 1869 or ASTM F 2170 test, the installation area must be maintained between for 65°F (19°C) and 85°F (30°C) or at least 48 hours prior to testing, during testing and thereafter. In addition, the concrete's temperature range must also be identical to that of the installation area. Conduct three test for the first 1,000 sq. ft. and one additional test for each 1,000 sq. ft. or fraction thereof per grade level. The Vapor Emission Rate shall not exceed 5.0 lbs and Relative Humidity Test shall not exceed 75% when using ROP535U Universal Urethane Enhanced Epoxy Adhesive or ROP 435 Solvent Free Epoxy Flooring Adhesive. ROP360 Vapor Emission Rate shall not exceed 4.0lbs and Relative Humidity Test shall not exceed 70%. If the substrate does not meet the above noted requirements, the flooring shall not be installed until the problem has been corrected. DO NOT install flooring if there is hydrostatic pressure. Every concrete floor slab on-grade or below grade to receive resilient flooring shall have a permanent, effective moisture vapor retarder installed below the slab. A pH test must be performed to test for excessive alkalinity using a pH pencil or litmus paper and deionized water. A scaly, sandy, or powdery surface is an indication of some form of contaminant, usually excessive alkalis or an alkali-silica residue. A pH reading higher than 8 is an indication of a potential problem and the concrete must be neutralized by rinsing with clear water. Apply clear water with a mop and allow to dry. Re-rinse with clear water, allow to dry and retest to ensure pH level is within acceptable range of 5 to 8 on the pH scale. Continue to neutralize until the pH level is acceptable. The testing of concrete for alkalinity indicates the degree of alkalinity only at the time the test is conducted, and cannot be used to predict long-term conditions. Moisture and alkali salts in the concrete can cause the following problems after installation: adhesive deterioration, bumps, ridges, bubbles, discoloration, mold, mildew, bacteria growth, efflorescence, tile shifting, tile releasing, tile peaking, or sheet seam curling. DO NOT install over burnished (slick troweled) concrete to avoid adhesive and underlayment patch or self-leveling bonding problems due to the non-porosity of the concrete finish. Corrective measures such as bead blasting (shot blasting) or scarifying must be performed prior to installation. The concrete slab must be of good quality, standard density concrete with low water/cement ratios consistent with placing and finishing requirements, having a maximum slump of 4", a minimum compressive strength of 3500 psi, and following the recommendations of ACI Standard 302.1R-96 for class 2 or call 4 floors and the Portland Cement Association's recommendations for slabs on ground. Joints such as expansion joints, contraction joints, isolation joints, saw cuts, control joints, grooves or other moving joints shall not be filled with patching compound or covered with resilient flooring. Expansion joint covers designed for use with resilient flooring should be used. Any non-moving surface cracks, depressions, and other irregularities shall be filled and smoothed with a high quality grade Portland cement-based, water resistant, non-shrinking, non-staining, mildew resistant, alkali resistant underlayment having a minimum compressive strength of 3500 psi after 28 days. Some underlayments may fail under excessive weight; an epoxy caulking



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compound may be required for certain repairs. Mechanically cleaning the substrate by shot-blasting, scarifying, or sanding shall be performed to achieve a flat, smooth, clean surface to prevent irregularities, roughness, or other defects from telegraphing through the new resilient flooring. The surface of the concrete shall be flat to within the equivalent of 3/16" in 10 feet, as described in ACI 117R. The surface shall be cleaned of all loose material by scraping, brushing, vacuuming, or other methods, or a combination thereof, immediately before commencing installation of resilient flooring. Follow the proper safety practices during the preparation and installation. Follow the recommendations of the American Concrete Institute (ACI 302.1R, *Guide for Concrete Floor and Slab Construction*; ACI 360.R, *Design of Slabs on Grade*; ACI 223, *Standard Practice for the Use of Shrinkage-Compensating Concrete*); The American Society for Testing and Materials (ASTM F 710, *Standard Practice for Preparing Concrete Floors and Other Monolithic Floors to Receive Resilient Flooring*), and the American National Standards Institute (ANSI A157.1, *Recommended Practice for Concrete Floor and Slab Construction*) for the preparation of concrete to receive resilient flooring. Refer to 6.2.1.

6.2.3 Wood subfloors to be used as subfloors/substrates are to follow the procedures recommended in 6.2.1 and 6.2.2. Wood subfloors should be of double layer construction with a minimum thickness of 1". Crawl spaces underneath wood subfloors shall be in compliance with local building code ventilation practices and have clearance of at least 18" of cross-ventilated space between the ground level and joists. Wood joists should be spaced on no more than 16" centers. Place a moisture retarder; having a maximum rating of 1.0 perm, on the top of the ground under the wood subfloor overlapped at least 8". APA, The Engineered Wood Association, Underlayment Grade plywood, minimum 3/8" thick, with a fully sanded face is to be used. Use APA approved exterior grade plywood if finished floors are subjected to moisture. OSB, lauan, maranti, solid-core mahogany, waferboard, particleboard, chipboard, flakeboard, tempered hardboard, glass mesh mortar units or cementitious tile backer boards, sheathing-grade plywood, preservative-treated plywood, or fire-retardant treated plywood are not recommended as some manufacturers may use resins or other adhesives in the manufacturing of the product that may cause discoloration or staining of the flooring. Wood subfloor movement, flexing or instability will cause the flooring installed to release, buckle or become distorted. Do not proceed with the installation until corrective measures have been made. The warranties, performance, installation, and use are the responsibility of the manufacturer and/or contractor. DO NOT use plastic or resin filler to patch cracks. DO NOT use cement or rosin coated nails or staples or solvent-based construction adhesive to adhere the plywood. Installation on a sleeper, a wood subfloor system constructed over the top of concrete, is not recommended. Installation directly over Sturd-I-Floor panels is not recommended. All wood subfloors, single construction plywood floors, single and/or double tongue-and-groove strip floors, and wood plank floors must be prepared to receive resilient flooring in accordance with federal and industry standards. Follow the recommendations of the APA, The Engineered Wood Association, *Design/Construction Guide, Residential and Commercial*, and ASTM F 1482, *Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring*, for the installation and proper construction of the panels to receive resilient flooring. It is the contractor's responsibility to determine if the subfloor is acceptable to receive the flooring.



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6.2.4 Cementitious Terrazzo and ceramic floors to be used as subfloors/substrates are to follow the procedures recommended for concrete in 6.2.1 & 6.2.2. Ceramic tile must be solidly adhered and all loose tiles must be removed and repaired or replaced. Ensure all glazed, sealed, smooth, and/or shiny surfaces are properly sanded and cleaned. Fill all grout lines and other irregularities with a manufacturer's recommended Portland cement-based underlayment with a minimum compressive strength of 3500 psi. The subfloor must be structurally sound. Inspect and ensure there is an adequate bond of the old flooring to the original substrate. Do not install over epoxy based terrazzo. Cementitious terrazzo must first be sanded to remove all finishes, and then cleaned. Conduct a bond test with adhesive to ensure a successful bond can be achieved before installing. Roppe **will not** warranty the product if there is a bond failure caused by problems relating to the old flooring.

6.2.5 Metal floors to be used as subfloors/substrates must be thoroughly cleaned of any residue, oil, paint, primer, sealer, rust, and oxidation and properly sanded/grinded to provide a smooth, level, clean substrate to receive flooring. The flooring must be installed within 12 hours after sanding/grinding to prevent the metal from re-oxidizing. The metal subfloor shall be structurally sound. Deflection of the metal can cause a bond failure between the adhesive and the metal substrate. It is the contractor's responsibility to decide the feasibility of the application, and Roppe Corporation will not be held liable for failures caused by flexing or deterioration of metal substrates. On an extremely smooth, non-porous, metal substrate, a longer "tack up" may be required in order to prevent the adhesive from oozing between the seams. Refer to 6.2.1. Caution: The installation of flooring material will not prevent deterioration of metal substrates from occurring.

6.3 Adhesive Application

6.3.1 ROP360 Acrylic Tile & Stair Tread Adhesive: ROP360 Acrylic Tile & Stair Tread Adhesive is a solvent free, high strength, acrylic adhesive for indoor installations over recommended and properly prepared concrete and wood subfloors only, on grade or above grade only. Use of ROP360 adhesive is limited to casual foot traffic, in areas where there are no lateral shear stresses or rolling loads, nor in areas that will not be subjected to topical moisture or liquids. ROP360 is not recommended for Lug-Back Tile or 800 Series Rubber Tile. ROP360 Spread coverage using a 1/32" x 1/16" x 1/32" "U" notch trowel is approximately 200-300 square feet per US gallon on a smooth or non-porous substrate. Over smooth or non-porous substrates, allow adhesive to "flash-off" 20 minutes before installing. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Over extremely porous or rough concrete, a 1/16" x 1/16" x 1/16" Square notch trowel is required (125-184 sq/ft/gal) & allow adhesive to "flash-off" for 10 minutes before installing. Approximate Working Time: 20-30 minutes (depending on substrate temperature, humidity & trowel size). At least 90% transfer of adhesive to the products backing is required. Excessive heat or movement of any kind or from non-environmentally controlled areas, glass-filtered or direct sunlight or unfiltered ultra-violet rays can have an adverse effect on both the tile and adhesive, and these



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condition or substrates should be avoided to prevent adhesive bonding & tile failure. Caution: If too much adhesive is applied, oozing at seams, air-bubbles and telegraphing can occur along with permanent adhesive displacement and unsightly areas when the floor is rolled. Therefore, test trowel size and flooring prior to installation to avoid the above noted potential problems. Adhesive is available in 1-gallon and 4-gallon pails. Shelf Life: Limited to one year from date of manufacture stored at 70°F (21°C) in unopened container. Freeze Thaw Stability: The adhesive is freeze-thaw stable to 5 cycles at 20°F (6°C); however, it is recommended to protect all adhesive products from freezing. If frozen, DO NOT stir until material has completely thawed.

ROP360 Acrylic Tile and Stair Tread Adhesive Calculated VOC's according to California SCAQMD Rule #1168: <13 grams per liter of coating. SCAQMD Rule 443.1: Grams of VOC per Liter of Material: < 10 gram/liter.

6.3.2 ROP 435 Solvent Free Epoxy Flooring Adhesive: ROP 435 Solvent Free Epoxy Flooring Adhesive is a solvent free, non-flammable, high performance epoxy adhesive for indoor installations over porous and non-porous substrates (excluding metal or slightly flexing substrates) on grade, below grade, or above grade. The ROP435 Solvent Free Epoxy Flooring Adhesive must be used for installations in areas where the flooring will be subjected to lateral shear stresses and/or rolling loads, and most other non-porous substrates, excluding metal and other slightly flexing substrates. Spread rate coverage using the 1/32" x 1/16" x 1/32" flat "U" notch trowel over smooth or non-porous substrates is approximately 185-245 square feet (Part A & B Mixed) per US gallon. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Note: Over extremely porous or rough concrete, a 1/16" x 1/16" x 1/16" Square notch trowel is required (125 – 185 sq/ft/gal). Caution: If too much adhesive is applied, oozing at seams, air-bubbles, permanent adhesive displacement, and telegraphing can occur when the floor is rolled or exposed to rolling loads resulting in loose and unsightly areas. Therefore, test trowel size and flooring prior to installation to avoid the above noted potential problems. Adhesive is available in 1-quart and 1-gallon units. Shelf life is one year @ 70°F (21°C) in an unopened container. Approximate Working Time: After properly mixed and immediately poured onto substrate: 30 - 40 minutes (depending on substrate temperature & trowel size). Although the epoxy components are non-freezing, the adhesive must be allowed to stabilize to ambient temperature before mixing. Any adhesive on the surface of the tiles or surrounding area must be removed immediately with a clean cloth dampened with warm soapy water or denatured alcohol. DO NOT allow the adhesive to cure on the surface of the tile flooring. A bond failure will occur if the epoxy is not properly mixed. Label information is in English and Spanish. Read all of the product and safety information concerning the adhesive and any other chemicals or cleaning agents prior to installation.

Roppe 435 Solvent Free Epoxy Flooring Adhesive Calculated VOC's according to California Rule #1168: ROP 435 Part A: 10 grams per liter of coating. ROP 435 Part B: 49 grams per liter of coating. ROP435 Part A & Part B Mixed Calculated VOC's: 15 grams per liter of coating.

6.3.3 Roppe 535U "Universal" Urethane Enhanced Epoxy Two-Part Adhesive: Roppe 535U "Universal" Urethane Enhanced Epoxy is a solvent-free, two-component adhesive for high



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performance installations of Roppe Rubber Tile. ROP535U “Universal” is recommended for indoor installations over properly prepared and recommended concrete, plywood, metal and other non-porous substrates, on grade, below grade, or above grade. ROP535U “Universal” Adhesive must be used for installations in areas where the flooring will be subjected to lateral shear stresses and/or rolling loads, in areas subjected to topical moisture or other liquids, and over metal and some other non-porous substrates, in addition to radiant-heat floors. The spread coverage over porous or rough substrates using the required 1/16” x 1/16” x 1/16” square notch trowel is approximately 100- 125 square feet (Part A & B Mixed) per US gallon. Over non-porous or smooth substrates, the spread coverage using the required 1/32” x 1/16” x 1/32” “U” notch trowel is approximately 125-185 square feet (Part A & B Mixed) per US gallon. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature). Caution: If too much adhesive is applied, oozing at seams, air-bubbles, adhesive displacement, and telegraphing can occur when the floor is rolled or exposed to rolling loads resulting in loose and unsightly areas. Therefore, test trowel size and flooring prior to installation to avoid the above noted potential problems. Adhesive is available in 1-gallon units. Shelf life is one year @ 70F (21°C) in an unopened container. Approximate Working Time: After properly mixed and immediately poured onto substrate: 30 - 40 minutes (depending on substrate temperature & trowel size). Although the epoxy components are non-freezing, the adhesive must be allowed to stabilize to ambient temperature before mixing. Any adhesive on the surface of the tiles or surrounding area must be removed immediately with a clean cloth dampened with warm soapy water or denatured alcohol. DO NOT allow the adhesive to cure on the surface of the flooring. A bond failure will occur if the epoxy is not properly mixed. Label information is in English and Spanish. Read all of the product and safety information concerning the adhesive and any other chemicals or cleaning agents prior to installation.

Roppe 535U “Universal” Solvent Free Urethane Enhanced Epoxy Flooring Adhesive Calculated VOC’s according to California Rule #1168: Roppe 535U Part A: 1.3 grams per liter of coating. Roppe 535U Part B: 2.4 grams per liter of coating. ROP535U Part A & Part B Mixed Calculated VOC’s: 1.21 grams per liter of coating.

6.4 Adhesive Application and Product Installation

6.4.1 Roppe Raised Design Rubber Tile Installation using ROP360 Acrylic Tile & Stair Tread Adhesive: Read product limitation/precautions and installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Un-box the tile and allow it to acclimate at least 48 hours before installing. If more than one box is used, ensure each have the same run number. The room must be precisely measured in order to square-off the area, in order to determine the center point. First, measure area where tile is to be installed to determine the best starting position in the room. Then use a chalk line to mark two lines that intersect these positions at right angles, creating four (4) quadrants. Starting at the corner of one (1) quadrant, install tiles in a pyramid design, ensuring proper tile alignment and proper adhesive (90%) transfer to the products backing. Alignment is to be checked continuously throughout the installation and corrected if needed. Tile can be installed diagonally or staggered joint configuration to achieve the appearance desired. Carefully select the ideal



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layout to avoid seams in high traffic areas, while achieving an equal balanced in the room, and all side cuts should be equal in dimension. Fit tile tightly together. Seams are approximately 6" away from any seams in the underlayment or substrate. Allow enough material for doorways, closets and alcoves etc. Allow an extra 3" for trimming or more if necessary for walls that are not square. Dry lay the flooring first to ensure desired aesthetics can be achieved & check for manufacturing imperfections and irregularities prior to installing. If the sanded back of the flooring becomes soiled prior to installation, clean with a soft cloth dampened with denatured alcohol and allow to dry before installing. Pour the adhesive onto the substrate and spread evenly using a 1/32" x 1/16" x 1/32" "U" notch trowel for smooth or non-porous substrate, and allow adhesive to "flash-off" 20 minutes before installing. Note: Over extremely porous or rough concrete, a 1/16" x 1/16" x 1/16" Square notch trowel is required, and allow adhesive to "flash-off" for 10 minutes before installing Caution: If too much adhesive is applied, oozing at seams, air-bubbles and telegraphing can occur along with permanent adhesive displacement when the floor is rolled. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the flooring is installed, which would result in a bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile and to prevent permanent adhesive displacement, and to also not track the adhesive onto the tile. Lay the tile into the adhesive to avoid trapping air. DO NOT drop the tile into the adhesive. DO NOT fit the tile forcibly. Using excessive pressure to fit the tile can cause peaking. Starting at the center, slowly roll and cross roll with a 100-pound 3-section roller within 15 minutes after each section has been installed. Re-roll & cross roll 30-45 minutes after initial rolling. The rolling time may need to be adjusted to climate conditions. Use a hand roller in areas that cannot be reached with the larger roller. Conduct a visual inspection during the rolling process to ensure there has been no shifting of the tile and that there is no adhesive on the surface of the tile. DO NOT wait until the entire installation is completed before rolling as the adhesive may have surpassed the open time and be cured. Clean the seams of any adhesive. DO NOT trowel fresh adhesive over previously spread adhesive. The adhesive ridgeline can telegraph through the product. After the first section of the tile has been laid and rolled, repeat the procedure for the remaining sections. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied, or the adhesive is too "wet". Immediately remove excessive wet adhesive with a soft, clean cloth dampened with warm soapy water. Periodically, lift the flooring to check for proper adhesive transfer. There should be at least a 90% coverage or better of adhesive on the back of the flooring. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. It may be necessary to weight the tile's seams to ensure they remain flat and level. The flooring for borders and other specialty areas must be scribed and cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, and other obstacles. Forcing incorrectly sized tile or cut pieces into smaller areas will cause buckling of the flooring. DO NOT wait until the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. There is to be no foot traffic on the floor for at least 48 hours and no maintenance performed for at least 3 days. Protect flooring against mars, marks, indentations and other damage.

6.4.2. Roppe Raised Design Rubber Tile Installation using ROP435 Solvent Free Epoxy Flooring Adhesive: Read product limitation/precautions and installation literature before proceeding. Follow



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safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Un-box the tile and allow it to acclimate at least 48 hours before installing. If more than one box is used, ensure each have the same run number.. The room must be precisely measured in order to square-off the area, in order to determine the center point. First, measure area where tile is to be installed to determine the best starting position in the room. Then use a chalk line to mark two lines that intersect these positions at right angles, creating four (4) quadrants. Starting at the corner of one (1) quadrant, install tiles in a pyramid design, ensuring proper tile alignment and proper adhesive (90%) transfer to the products backing. Alignment is to be checked continuously throughout the installation and corrected if needed. Tile can be installed in a staggered joint configuration to achieve the appearance desired. The flooring can also be installed diagonally. Carefully select the ideal layout to avoid seams in high traffic areas, while achieving an equal balanced in the room, and all side cuts should be equal in dimension. Fit tile tightly together. Seams are approximately 6" away from any seams in the underlayment or substrate. Allow enough material for doorways, closets and alcoves etc. Allow an extra 3" for trimming or more if necessary for walls that are not square. Dry lay the flooring first to ensure desired aesthetics can be achieved & check for manufacturing imperfections and irregularities prior to installing. If the sanded back of the flooring becomes soiled prior to installation, clean with a soft cloth dampened with denatured alcohol and allow to dry before installing. Remove the lids and add all of Part B into Part A. Mix the combined parts with the furnished paddle using a rotary motion while at the same time lifting from the bottom. DO NOT mix partial units of this adhesive! ROP435 Solvent Free Epoxy Flooring Adhesive is packaged in two separate containers marked Part A (epoxy resin) and Part B (polyamide resin, hardener). Mix adhesive by hand or use a slow speed, less than 300 RPM maximum, drill with an attached mixing paddle may also be used. Mix approximately 4 minutes. After mixing, the adhesive must be one consistent solid color. Caution: Higher mixing speeds and/or longer mixing time will reduce the open time/working time and can cause premature curing of the adhesive. Adhesive will not cure if not properly mixed. DO NOT allow the mixed epoxy adhesive to remain in the container. Immediately after mixing, pour the contents onto the substrate and spread the adhesive evenly over smooth substrates using a 1/32" x 1/16" x 1/32" flat "U" notch trowel, being careful to leave no puddles of adhesive. Note: Over extremely porous or rough substrates, a 1/16" x 1/16" x 1/16" Square notch trowel is required. Caution: If too much adhesive is applied, oozing at seams, air-bubbles and telegraphing can occur along with permanent adhesive displacement when the floor is rolled or subject to rolling loads resulting in loose or unsightly areas. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the flooring is installed which would result in a bond failure. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the flooring is installed which would result in a bond failure. Caution: Allowing the adhesive to remain open too long will result in bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile and to prevent permanent adhesive displacement and to also not track the epoxy adhesive onto the tile. Lay the tile into the adhesive to avoid trapping air. DO NOT drop the tile into the adhesive. DO NOT fit the tile forcibly. Using excessive pressure to fit the tile can cause peaking. Starting at the center, slowly roll and cross roll with a 100-pound 3-section roller. Re-roll flooring 30 minutes after initial rolling. The rolling time may need to be adjusted to climatic conditions. Use a hand roller in areas that cannot be reached with the larger roller.



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Conduct a visual inspection during the rolling process to ensure there has been no shifting of the tile and that there is no adhesive on the surface of the tile. DO NOT wait until the entire installation is completed before rolling as the adhesive may have surpassed the open time and be cured. Clean the seams of any adhesive. The ridges of the adhesive should be flattened. After the first section of the tile has been laid and rolled, repeat the procedure for the remaining sections. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied, or the adhesive is too “wet”. Immediately remove excessive wet adhesive with a soft, clean cloth dampened with warm soapy water. Periodically, lift the flooring to check for proper adhesive transfer. There should be at least a 90% coverage or better of adhesive on the back of the flooring. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. It may be necessary to weight the tile’s seams to ensure they remain flat and level. The flooring for borders and other specialty areas must be scribed and cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, and other obstacles. Forcing incorrectly sized tile or cut pieces into smaller areas will cause buckling of the flooring. DO NOT wait until the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. There is to be no foot traffic on the floor for at least 48 hours. There is to be no wheeled conveyances or maintenance performed for at least 72 hours. Protect flooring against mars, marks, indentations and other damage.

6.4.3 Roppe Raised Design Rubber Tile Installation using Roppe 535U “Universal” Urethane Enhanced Epoxy Two-Part Adhesive: Read product limitation/precautions and installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Un-box the tile and allow it to acclimate at least 48 hours before installing. If more than one box is used, ensure each have the same run number. The room must be precisely measured in order to square-off the area, in order to determine the center point. First, measure area where tile is to be installed to determine the best starting position in the room. Then use a chalk line to mark two lines that intersect these positions at right angles, creating four (4) quadrants. Starting at the corner of one (1) quadrant, install tiles in a pyramid design, ensuring proper tile alignment and proper adhesive (90%) transfer to the products backing. Alignment is to be checked continuously throughout the installation and corrected if needed. Tile can be installed in a staggered joint configuration to achieve the appearance desired. The flooring can also be installed diagonally. Carefully select the ideal layout to avoid seams in high traffic areas, while achieving an equal balanced in the room, and all side cuts should be equal in dimension. Fit tile tightly together. Seams are approximately 6” away from any seams in the underlayment or substrate. Allow enough material for doorways, closets and alcoves etc. Allow an extra 3” for trimming or more if necessary for walls that are not square. Dry lay the flooring first to ensure desired aesthetics can be achieved & check for manufacturing imperfections and irregularities prior to installing. If the sanded back of the flooring becomes soiled prior to installation, clean with a soft cloth dampened with denatured alcohol and allow to dry before installing. Remove the lids and add all of Part B into Part A. Mix the combined parts with the furnished paddle using a rotary motion while at the same time lifting from the bottom. DO NOT mix partial units of this adhesive!. ROP535U Universal Flooring Adhesive is packaged in two separate containers marked Part A (polyurethane epoxy resin) and Part B (polyamide resin, hardener). Mix adhesive by hand or



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use a slow speed less than 300 RPM maximum, drill with an attached mixing paddle. Mix 3-5 minutes. After mixing, the adhesive must be one consistent solid color. Caution: Higher mixing speeds and/or longer mixing time will reduce the open time/working time and can cause premature curing of the adhesive. Adhesive will not cure if not properly mixed. DO NOT allow the mixed epoxy adhesive to remain in the container. Immediately after mixing, pour the contents onto the porous substrate and immediately spread the adhesive evenly over smooth substrates using a 1/32" x 1/16" x 1/32" square "U" notch trowel, being careful to leave no puddles of adhesive. Note: Over extremely porous or rough concrete, a 1/16"x 1/16" x 1/16" Square notch trowel is required. For the installation of Roppe's Lug-Back Tile, ROP535U must be used and applied using a 1/8" x 1/8" x 1/16" "U" notch trowel yielding approximately 60-75 sq/ft per U.S. Gallon. Caution: If too much adhesive is applied, oozing at seams, air-bubbles and telegraphing can occur along with permanent adhesive displacement when the floor is rolled or subjected to rolling loads resulting in loose or unsightly areas. Spreading large areas of adhesive in excess of 150 square feet could possibly allow the adhesive to cure or setup before the flooring is installed which would result in a bond failure. Caution: Allowing the adhesive to remain open too long will result in bond failure. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile and prevent permanent adhesive displacement, and to also not track the epoxy adhesive onto the tile. Lay the tile into the adhesive to avoid trapping air. DO NOT drop the tile into the adhesive. DO NOT fit the tile forcibly. Using excessive pressure to fit the tile can cause peaking. Starting at the center, slowly roll and cross roll with a 100-pound 3-section roller. Re-roll flooring 30 minutes after initial rolling. The rolling time may need to be adjusted to climatic conditions. Use a hand roller in areas that cannot be reached with the larger roller. Conduct a visual inspection during the rolling process to ensure there has been no shifting of the tile and that there is no adhesive on the surface of the tile. DO NOT wait until the entire installation is completed before rolling as the adhesive may have surpassed the open time and be cured. Clean the seams of any adhesive. The ridges of the adhesive should be flattened. After the first section of the tile has been laid and rolled, repeat the procedure for the remaining sections. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied, or the adhesive is too "wet". Immediately remove excessive wet adhesive with a soft, clean cloth dampened with warm soapy water. Periodically, lift the flooring to check for proper adhesive transfer. There should be at least a 90% coverage or better of adhesive on the back of the flooring. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. It may be necessary to weight the tile's seams to ensure they remain flat and level. The flooring for borders and other specialty areas must be scribed and cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, and other obstacles. Forcing incorrectly sized tile or cut pieces into smaller areas will cause buckling of the flooring. DO NOT wait until the entire main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. There is to be no foot traffic on the floor for at least 48 hours and no wheeled conveyances nor maintenance performed for at least 3 days. Protect flooring against mars, marks, indentations and other damage.

7. Product Maintenance/Precautions



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7.1 Required Initial Maintenance

7.1.1 Liquid/Solution Cleaning (Non Sealer/Finish Applications): All procedures only apply to Roppe Raised Design Rubber Tile and Dimensions Rubber Tile. Please choose the correct procedure/procedures pertaining to your specific installation. Read the manufacturers recommendations, procedures and cautions before applying. Always test a small area first to ensure the desired results are achieved before proceeding. The first month after the installation of Roppe Rubber Tile should be used as a test period to assess the best procedure for continued maintenance. Insufficient cleaning and maintenance will reduce the wear life and appearance of the tile. There is to be no foot traffic on the tile or cleaning for at least 72 hours and no wheeled conveyances for at least 3 days to allow Roppe's recommended adhesives to properly cure. Remove any covering that may have been used to protect the floor. If the Rubber Tile is brand new, there is a silicone mold release on the face of the tile from the manufacturing process, which must be removed. The tile must be properly cleaned and the mold release agent removed before it is released for use of any kind. First, sweep or vacuum to remove dirt and other particulates. To remove the mold release, the tile must be scrubbed with either Spartan Chemical's (800-537-8990 or www.spartanchemical.com) LOE Stripper or Green Solutions Floor Finish Remover. Apply diluted cleaning solution to the tile with a soft-bristled deck brush (required for raised design tile). Scrub the area with either a 175-350 RPM maximum scrubbing machine using a soft-bristled nylon scrubbing brush or hand scrub with a soft-bristled deck brush (required for raised design tile) or a 3M 4100 White Super Polish Pad (required for smooth finish tile). Rubber Tile must be thoroughly cleaned in both directions in order to remove the mold release agent. Ensure the brush does not scratch the tile and do not heel the scrubbing machine. Follow the manufacturer's recommendation for dilution, use and special precautions and warnings. Do not allow solution to dry or the scrubbing machine or brush to scratch the tile. DO NOT flood the tile when cleaning and do not allow the cleaning solution or water to work its way beneath the tile which can result in an adhesive failure. Wet vacuum or mop up the residue. Rinse with clean, cool water, remove the water utilizing a wet vacuum or mop, and allow the tile to dry thoroughly. Afterwards, Use a mild, neutral (pH 7 to 8) cleaner like Spartan Chemical's Damp Mop or Spartan Chemical's Green Solutions Neutral Disinfectant Cleaner to clean the Tiles in order to completely remove the mold release cleaning products. Follow the manufacturer's recommendations for dilution and use. Allow the cleaning solution to stand for approximately 10 to 15 minutes; however, DO NOT allow the solution to dry or work its way beneath the tile resulting in an adhesive failure. Scrub the area with either a 175-350 RPM maximum scrubbing machine using a soft-bristled nylon scrubbing brush or hand scrub with a soft-bristled deck brush (required for raised design tile) or a 3M 4100 White Super Polish Pad (required for smooth finish tile). All Tile must be thoroughly cleaned in both directions. Rinse with clean, cool water, remove the water, and allow the tile to dry thoroughly, normally 3 to 4 hours before exposing to traffic DO NOT use highly alkaline, highly acidic, or solvent-based cleaners. DO NOT flood the floor or scratch during application.

7.1.2 Dry Buffing - (Non Sealer/Finish Applications): After wet-cleaning the flooring, dry buffing should be performed on routine basis to maintain the floors natural surface luster. DO NOT dry buff the floor until it has been cleaned with clean, cool water. Remove rinse water with a wet/dry



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vacuum and allowed to dry completely. For large installations, dry polish with single disc 175-350 maximum RPM polishing machine using a soft-bristled nylon scrubbing brush if the floor has a surface profile (required for raised profiles) or a 3M 4100 White Super Polish Pad if the floor has a smooth profile. If a higher gloss is preferred, then buff with a 1,000 RPM (maximum) polishing machine with a 3M 4100 White Super Polish Pad. DO NOT heel the polishing machine or scratch the flooring. For small installations, use a soft, clean cloth wrapped around a narrow push broom. If an optional floor finish is desired for a higher sheen, refer to section 7.1.5.

Caution: When floor sealers and finishes are used, the floor surface will take on the slip resistance characteristics of that particular coating. Roppe Corporation will not be held liable for the slip resistance effects of their flooring if it is coated with a floor sealer or finish. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. DO NOT allow the solution/water to dry or work its way beneath the flooring resulting in an adhesive failure.

7.1.3 Mild-Neutral PH Cleaning or Disinfectants - (Non Sealer/Finish Applications): The amount of maintenance required is directly related to the amount and type of traffic and type of particulates deposited on the floor. Sweep, dust mop or vacuum the flooring to remove dirt and other particulates. Use a mild, neutral (ph 7-8) cleaner such as Spartan Chemical's Damp Mop or Green Solutions All Purpose Cleaner. If a disinfectant is required, use Spartan Chemical's DMQ Neutral Disinfectant Cleaner or Green Solutions Neutral Disinfectant Cleaner. Follow the manufacturer's recommendations for dilution and use. For smaller applications, apply the diluted cleaning solution to the flooring with a soft-bristled desk brush (required for raised profiles) or nylon mop (required for smooth profile floors). Do Not flood the floor. Allow the cleaning solution to stand for approximately 10 - 15 minutes. Do Not allow solution to dry. For small applications, scrub with a soft-bristled deck brush. For large applications, scrub the are with a single disc 175 RPM maximum scrubbing machine equipped with a soft-bristled scrubbing brush (required for textured, slate and raised profiles) or 3M 4100 White Super Polish Pad (required for smooth finish profiles). Ensure brush or pad does not scratch the flooring. Wet vacuum or mop up residue. Rinse with clean, cool water. Remove the rinse water with a wet/dry vacuum and allow flooring to dry thoroughly before exposing to traffic. Do Not use highly alkaline, highly acidic or solvent- base cleaners or products of any kind. DO NOT use sweeping or cleaning agents containing oil or solvents. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. DO NOT allow the solution to dry or work its way beneath the flooring resulting in an adhesive failure.

7.1.4 Floor Preparation after Initial Installation and Prior to applying Optional Floor Sealer & Finish: There is to be no foot traffic on the tile or cleaning for at least 72 hours and no wheeled conveyances for at least 3 days. Roppe Rubber Tile has a mold release agent on the wear surface from the manufacturing process which MUST be removed prior to allowing traffic of any kind, and prior to applying Optional Floor Sealer & Finish. Failure to remove this mold release agent can result in a low traction floor (i.e.: Slippage) or a surface that is not compatible with floor finish. To remove the mold release, refer to section 7.1.1.



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7.1.5 Optional Floor Sealer & Finish Application: Caution - Applying sealers or finishes can darken the floorings original color or finish. When applying sealers or finishes always check first for compatibility, bonding and color darkening of the flooring by testing on a scrap piece of flooring to ensure the desired results and appearance is achieved. If a floor sealer/finish is preferred, first follow sections noted in Section 7.1.1. Once the mold release has been completely removed, test for proper adhesion by applying Spartan Chemical's Shinline Sealer (24% solids thermoplastic sealer) to a small area with a sponge and allow to completely dry. If the finish pulls back and does not level out, repeat step 7.1.1 until the sealer is firmly bonded. If the sealer does level and is firmly bonded, Spartan Shinline Sealer can be used to seal the floor by applying with a finish mop. Once Shinline Seal has been applied and properly dry, apply 1-2 very thin coats of the Spartan floor finish that meets your traffic and maintenance needs. Each coat of floor finish must be applied in opposite directions to ensure proper coverage regardless of the flooring profile. Contact your Spartan Chemical Representative or Spartan Chemical (800-537-8990) directly for proper finish recommendations to meet specific traffic and maintenance requirements. If an environmentally preferable product is desired, apply 1-3 very thin coats of Spartan Green Solutions Floor Seal & Finish (acrylic co-polymer based floor seal and finish combination) in lieu of Shinline Sealer. Apply sealers or finishes in very thin coats to avoid puddles. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. When applying sealers or finishes always check first for compatibility, bonding and color darkening of the flooring by testing on a scrap piece of flooring to ensure the desired results and appearance is achieved. The floor care product manufacturer will assist you in determining the best maintenance program. Spartan Chemical's product selection is listed below for reference depending on frequency/infrequency of maintenance schedule to be performed on the flooring. Caution: When floor sealers and finishes are used, the floor surface will take on the slip resistance characteristics of that particular coating. Roppe Corporation will not be held liable for the slip resistance effects of their flooring if it is coated with a floor sealer or finish. DO NOT allow the solution to dry or work its way beneath the flooring resulting in an adhesive failure. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic.

A. Frequent Maintenance Schedule: Described as "at least twice a week or as often as every day". Notice: Finishes listed below must be burnished (polished until shinny) in order to maintain gloss levels. Burnish frequency will depend on several factors including but not limited to the following: Type of finish, traffic, equipment, internal/external conditions, type of floor, labor/budget available, and end user expectations.

* Spartan Chemical Product Selections for Frequent Maintenance Schedules:

- o High Frontier
- o Upper Limit's
- o TriLinc



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- o Trendsetter Sealer/Finish
- o Pro-Shine
- o Heavy Duty Wax 16%
- o Glacier

B. Infrequent Maintenance Schedule: Described as "once a week to never". Notice: The products listed below are considered Dry-Bright Finishes which dry to a particular gloss and remain that way. Gloss loss with these finishes is due to superficial wear and tear. When burnishing, spray buffing and/or using a finish restorer, surface imperfections are repaired to restore gloss - there is no real "polishing", as there is with burnishable finishes.

* Spartan Chemical Product Selections for Infrequent Maintenance Schedules:

- o Millennia Bright Dura Gloss Laminate
- o Sheen 17
- o White Sun
- o Sunny-Side
- o iShine
- o On an' On
- o Green Solutions Floor Seal & Finish
- o Terra Glaze

7.1.6 Existing Floor Sealer/Finish Removal: To remove existing floor finishes/sealers, first the flooring must be properly cleaned by first sweeping or vacuuming to remove dirt and other particulates. Strip with either Spartan Chemical's Rinse Free Stripper or Green Solutions Floor Finish Remover utilizing a single disc 175 RPM maximum scrubbing machine with a soft-bristled nylon brush (required for raised profiles) or a 3M 4100 White Super Polish Pad (required for smooth finish profiles). Ensure the brush or pad does not scratch or damage the flooring. Rinse with clean, cool water and remove rinse water with wet/dry vacuum and allow floor to dry completely. Refer to Section 7.1.5 regarding reapplying the recommended Spartan Chemical's floor sealer and finish. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. Remove solution with a wet/dry vacuum. DO NOT allow the solution to dry or work its way beneath the flooring resulting in an adhesive failure. Caution: Applying sealers or finishes will darken the floorings original color. When applying sealers or finishes always check first for compatibility, bonding and color darkening of the flooring by testing on a scrap piece of flooring to ensure the desired results and appearance is achieved. Caution: When floor sealers and finishes are used, the floor surface



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will take on the slip resistance characteristics of that particular coating. Roppe Corporation will not be held liable for the slip resistance effects of their flooring if it is coated with a floor sealer or finish.

7.1.7 Routine Maintenance for Optional Sealer/Finish Applications: Insufficient cleaning will reduce the wear life and the appearance of the flooring or optional sealers/finishes. The amount of maintenance required is directly related to the amount and type of traffic and type of particulates deposited on the floor. There are several alternative maintenance systems available from Spartan Chemical (800/537-8990). The flooring must be properly cleaned by first sweeping or vacuuming to remove dirt and other particulates from both smooth and profiled floors. Dust mop smooth profile floors with Spartan's Dust Mop/Dust Cloth Treatment. Flooring can also be damp mopped with Spartan's Damp Mop Detergent Concentrate or Spartan DMQ Neutral Disinfectant Cleaner. If an environmentally preferable product is desired, damp mop with Spartan Green Solutions All Purpose Cleaner. An auto-scrubber with a scrubbing brush (required for raised profiles) or 3M White Super Polish Pad (required for smooth finish profiles) may also be used for cleaning. Caution: Ensure the scrubbing brush or pad does not scratch or damage the flooring. Caution: When wet, flooring will become slippery; therefore, use the appropriate warning signs on the floor to eliminate foot or other traffic. DO NOT allow the solution to dry or work its way beneath the flooring resulting in an adhesive failure. Caution: When floor sealers and finishes are used, the floor surface will take on the slip resistance characteristics of that particular coating. Roppe Corporation will not be held liable for the slip resistance effects of their flooring if it is coated with a floor sealer or finish.

7.1.8 Dry Buffing (Sealer/Finish Applications): DO NOT dry buff the Rubber Tile for at least 72 hours after the installation is complete to allow the recommended Roppe adhesives to properly cure. Dry buffing should be performed on a routine basis to maintain the surface luster. DO NOT dry buff until the tile have been thoroughly cleaned and allowed to completely dry. Buff tile using a single disc 350 - rpm maximum buffing machine with an attached soft polishing brush required for textured, slate and raised designed tile or a 3M 4100 White Super Polish Pad (required for smooth finish tile). Polish tile in both directions. Ensure the polishing brushes do not scratch the tile DO NOT heel the buffing machine. After a period of time, the build up of wax or floor finish will need to be removed. Currently, Spartan Chemical recommends either LOE Stripper or Green Solutions Floor Finish Remover. Use the wet cleaning procedure described in 7.1.6 to remove the build up and for restorative maintenance.

7.1.9 Maintenance Warnings and Cautions (Non- Floor Sealer Application/Finish & Optional Floor Sealer/Finish Application): Caution: Applying sealers or finishes can darken the floorings original color or finish. Caution: The use of floor finishes or sealers can reduce the slip resistant properties of rubber tile. When applying sealers or finishes always check first for compatibility, bonding and color darkening of the flooring by testing on a scrap piece of flooring to ensure the desired results and appearance is achieved. The floor care product manufacturer will assist you in determining the best maintenance program. Caution: When floor sealers and finishes are used, the floor surface will take on the slip resistance characteristics of that particular coating. Roppe Corporation will not be held liable for the slip resistance effects of their flooring if it is



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coated with a floor sealer or finish. Caution: When wet, the flooring will become slippery; therefore, use the appropriate warning signs on the flooring to eliminate foot or other traffic. Caution: Contact Spartan Chemical before applying products to verify recommendations for stripping flooring. Some strippers can have an adverse effect on the flooring. Always test first to ensure the flooring is not affected and the desired results can be achieved prior to applying strippers of any kind. DO NOT use highly alkaline, highly acidic, or solvent-based cleaners of any kind. Caution: Some germicides, disinfectants, cleaning agents, floor maintenance products, and pesticides can stain or damage the surface of rubber floor; therefore, test the products to ensure they will not stain or damage the tile. Spills of any type must be removed immediately to help prevent staining or permanent damage. DO NOT use sweeping or cleaning agents containing oil or solvents. DO NOT use treated mops and thoroughly clean new mops before use. DO NOT use kerosene, gasoline, naphtha, or other solvents on rubber flooring. DO NOT use varnish, shellac, paste wax, paint, or other substances that could discolor or damage the flooring. DO NOT allow the solution to dry or work its way beneath the flooring resulting in an adhesive failure.

8. Availability and Cost

8.1 Products are available through Roppe distributors. Contact Roppe Customer Service at 1.800.537.9527 or visit www.roppe.com for a distributor near you.

8.2 Samples may be obtained by may be obtained by calling Roppe Customer Service at 1.800.537.9527, or by visiting www.roppe.com

9. Technical Assistance

Technical service information and assistance may be obtained by calling Roppe Customer Service at 1.800.537.9527, or by visiting www.roppe.com.

10. Limited Warranty

Roppe Corporation manufactures and markets its floor products under the trade name Roppe. Roppe Raised Rubber Tile is warranted for a period of one (1) year from date of installation to be free of defects in material and workmanship. Roppe has both a five (5) year (See Limited Wear Warranty) and ten (10) Year Limited Wear Warranty on Roppe Raised Rubber Tile 1/8" thick tile for non-transit use, based by product design and installation purpose, if installed, maintained, and used strictly in accordance with Roppe's written instructions and installed with the recommended Roppe adhesive. Refer to Roppe Product Specification Sheet before proceeding with installation. For any applications not listed, do not proceed with installation regardless of the circumstance. Instructions may be obtained from a Roppe distributor or by writing Roppe Corporation, Attention: Sales Service Manager, P.O. Box 1158, Fostoria, OH, 44830. Notice of any defect must be made in writing to Roppe within thirty (30) days after buyer learns of the defect. No merchandise is to be returned prior to Roppe's inspection and written approval. Buyer's sole and exclusive remedy against Roppe and Dealer for claims arising hereunder for any and all losses and damages resulting from any cause shall be a pro rata credit based on the period remaining in this Limited



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Warranty toward the purchase of new Roppe Raised Rubber Tile. Replacement credit shall be equal to the proportion of Limited Warranty time remaining multiplied by the current price of Roppe Raised Rubber Tile. In no event shall Roppe be liable for incidental or consequential damages, even if some other provision of this Limited Warranty is unenforceable. Buyer waives all other claims and remedies of any nature. Roppe Raised Rubber Tile is not designed for use in or near commercial kitchens or for outdoors use. Roppe shall have no liability whatsoever to Buyer in the event the goods become defective if such defect is caused in whole or part by cuts, tears, vandalism, fire, willful destruction, damage from high heels, spiked footwear, improper installation, improper maintenance, subfloor and/or substrate irregularities, accidents, natural causes, or acts of God. Roppe will not be liable for labor costs or lost profits resulting from the use of or inability to use the product. Roppe will not be liable for labor costs for material that is installed with obvious defects. Products designated as “seconds”, “mill run”, “non-conforming”, not being of first quality, are sold as-is and Roppe makes no warranties whatsoever, expressed or implied, with respect thereto, including warranties of merchantability or fitness for a particular use. These warranties are expressly in lieu of any other warranties expressed or implied. By retaining Roppe’s merchandise for more than five (5) days after receipt of such merchandise, Buyer agrees that it accepts the terms of this Limited Warranty and that there are no warranties or rights beyond those contained herein. All claims must be made in writing and sent to Roppe Corporation, Attn: Claims Manager, P.O. Box 1158, Fostoria, Ohio, 44830. All claims for surface defects or variations in color or pattern must be delivered to Roppe in writing before the product is installed. Roppe will not accept the return of any product without prior written approval of the Roppe Claims Department.

* Limited Wear Warranty Terms (Products Types & Design: Hammered Design, Vantage Lug-Back, Low Profile Raised Circular, Slate, Textured, Dimensions & Warning Rubber Tile). If excessive wear is suspected, the original purchaser must notify Roppe Corporation in writing and permit an inspection of the flooring. If Roppe Corporation determines excessive wear, and the flooring has been properly installed and maintained, Roppe Corporation will replace the flooring based on the following terms:

A. Terms

- a. Within One-Year: If excessive wear is determined by Roppe within one (1) year of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will also pay reasonable labor cost once submitted in writing and approved.
- b. Within Two-Years: If excessive wear is determined by Roppe within two (2) years of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will also pay fifty-percent (50%) of reasonable labor cost once submitted in writing and approved.
- c. After Two-Years & Within Five-Years: If excessive wear is determined by Roppe after two (2) years and within five (5) years of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will not pay labor cost for material installed after two (2) years and within five (5) years of installation.



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* Limited Wear Warranty Terms (Product Type & Design: Raised Circular Vantage & Raised Square Design Rubber Tile): If excessive wear is suspected, the original purchaser must notify Roppe Corporation in writing and permit an inspection of the flooring. If Roppe Corporation determines excessive wear, and the flooring has been properly installed and maintained, Roppe Corporation will replace the flooring based on the following terms:

B. Terms:

- a. Within One-Year: If excessive wear is determined by Roppe within one (1) year of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will also pay reasonable labor cost once submitted in writing and approved.
- b. Within Two-Years: If excessive wear is determined by Roppe within two (2) years of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will also pay fifty-percent (50%) of reasonable labor cost once submitted in writing and approved.
- c. After Two-Years & Within Ten-Years: If excessive wear is determined by Roppe after two (2) years and within ten (10) years of installation, Roppe will furnish new material of the same or similar style and color sufficient to repair or replace the defective material. Roppe will not pay labor cost for material installed after two (2) years and within ten (10) years of installation.

Limited Wear Warranties by Product Type and Design

Product	Purpose (Use)	Limited Wear Warranties
Raised Circular Vantage Design Tile	Heavy Traffic	10 Years
Raised Square Design Tile	Heavy Traffic	10 Years
Vantage Lug-Back Tile	Heavy Commercial Traffic	5 Years
Low Profile Raised Circular Design Tile	Normal Commercial Traffic	5 Years
Slate Design Tile	Normal Commercial Traffic	5 Years
Textured Design Tile	Normal Commercial Traffic	5 Years
Random Design Tile	Normal Commercial Traffic	5 Years
Stripe Design Tile	Normal Commercial Traffic	5 years
Crackle Design Tile	Normal Commercial Traffic	5 years
Warning Tile	Normal Commercial Traffic	5 Years
Hammered Design Tile	Normal Commercial Traffic	5 Years

