

Rop-Cord™

Rubber Floor Tile



Product Data

Section 9
Resilient Flooring

1. Product Identification

Roppe Rop-Cord™ Rubber Floor Tile
(Vulcanized and Non-vulcanized Rubber Tile)

2. Manufacturer

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3. Product Description

3.1 Product Basics

Made for the most demanding applications, Rop-Cord is durable, anti-slip flooring with outstanding sound absorption properties. Rop-Cord tile may be used as a walk-off mat for entryways, lobbies, concourses, and foyers in shopping malls, grocery stores, airports, factories, office buildings, skating rinks, schools, theaters, bowling alleys, ski lodges, and other demanding indoor and outdoor applications. It also can be used in areas subject to cleats and spikes, such as golf pro shops, locker rooms, sports complexes, and athletic equipment rooms. The added traction of the surface makes Rop-Cord flooring extremely useful for inclined ramps, walkways, stairwells, and airport passenger loading bridges. Rop-Cord can be installed on flat surfaces or in recessed areas. The tile can be trimmed and cut easily for borders or other hard-to-fit areas. The nylon cord is buffed to produce an even, non-glare, tufted surface that complements practically any design scheme, so you can create borders, herringbones, standard or diagonal parquets, large geometric grids, and countless other designs. Inside or out, Rop-Cord

flooring can stand up to the toughest commercial traffic. Its non-skid, ribbed construction is soft enough to be comfortable to walk on, but sturdy enough to withstand the heaviest wear. Anywhere flooring is going to be abused, where the traffic is heavy, where the dirt and grime is ground in, Rop-Cord offers both durability and aesthetics. Rop-Cord tile is perfect for exterior installations where the weather can take its toll on flooring. Even when wet, it still retains its non-skid properties and ensures sure footing in the worst conditions. Rop-Cord can take the heaviest traffic in stride while enhancing walking comfort and reducing foot and leg fatigue. Rop-Cord tiles come with a lifetime delamination warranty and a 10-year limited wear warranty, when properly cleaned and maintained.

3.2 Rop-Cord Vulcanized and Non-Vulcanized

are products manufactured with 90% of the components comprised of recycled truck and bus tires. Rop-Cord Vulcanized construction is a synthetic tire cord reinforced with a layer of fabric, and then vulcanized to a



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thin rubber backing. Rop-Cord Non-Vulcanized construction is made of a synthetic tire core reinforced with a polyester non-woven fabric bonded to a thin-adhesive layer. The nylon cord is then buffed to produce an even, non-glare, tufted surface. The result is a nominal 5/16" (Vulcanized) and 3/8" (Non-Vulcanized) thick tiles that is highly resistant to organic deterioration and damage from the elements.

3.3 Product Types and Dimensions

- Vulcanized Gauge: nominal 5/16" (7.92mm)
- Non-Vulcanized Gauge: nominal 3/8" (9.52mm)
- Vulcanized and Non-Vulcanized tile sizes: Nominal 12" x 12" (304.8mm x 304.8mm)
- Vulcanized and Non-Vulcanized square feet per carton: 12" x 12" tile, 25 square feet.
- Vulcanized and Non-Vulcanized colors: Earthtone (POET), Indigo (POIN), Crimson (POCR), Pine (POPN)

*Special Order Rolls Available - Types and Dimensions

- Vulcanized and Non-Vulcanized Roll: Nominal 12" x 30 feet
- Vulcanized and Non-Vulcanized square feet per carton: 12" x 30-ft roll, 30 square feet.
- Vulcanized Gauge: nominal 5/16" (7.92mm)
- Non-Vulcanized Gauge: nominal 3/8" (9.52mm)
- Vulcanized and Non-Vulcanized roll colors: Earthtone (POET), Indigo (POIN), Crimson (POCR), Pine (POPN)

3.4 Features & Benefits

- Manufactured from 90% post-consumer waste from tires.
- Vulcanized and Non-Vulcanized backings available.
- Modular tile allows diverse patterns.
- Easy maintenance includes regular vacuuming and spot cleaning as needed.
- Outdoor installations can be hosed off and left to dry.
- Meets ADA recommendations for ramps.
- Lifetime delamination warranty.
- 10-year limited warranty.

- Durable anti-slip flooring engineered for use indoors and out.

4. Technical & Specification Data:

ASTM does not currently have requirements for this specific product category.

4.2 Architects' Material Specifications - VULCANIZED ROP-CORD™ RUBBER FLOOR TILE

All floors shown in the finish schedule or listed in this specification for heavy traffic area shall be Roppe Rop-Cord™ as furnished by Roppe Corporation, Fostoria, Ohio. Rop-Cord™ Vulcanized tile shall be homogeneously constructed of select reclaimed commercial tire components, reinforced with a layer of fabric and then vulcanized to a thin rubber backing. Tiles shall be 5/16" nominal thickness, shall conform to industry standards and shall contain no asbestos fiber. Floor covering shall be 12" x 12" (304.8mm x 308.4mm) tiles, and in the color _____ (insert color name and number selected).

NON-VULCANIZED ROP-CORD™ RUBBER FLOOR TILE

Rop-Cord™ Non-Vulcanized tile shall be homogeneously constructed of select reclaimed commercial tile components, reinforced with a polyester non-woven fabric bonded to a thin-adhesive layer. Tiles shall be 3/8" nominal thickness, shall conform to industry standards and shall contain no asbestos fiber. Floor covering shall be 12" x 12" (304.8mm x 308.4mm) tiles, and in the color _____ selected (insert color name and number selected).

4.3 Product Limitations/Precautions

Rop-Cord Vulcanized and Non-Vulcanized tile must be installed using Roppe 445 Rop-Cord Synthetic Latex-Based Adhesive (for indoor/outdoor use/porous substrates/on or above grade only & for non-rolling load or lateral shear installations) or Roppe 435 Solvent Free Epoxy Flooring Adhesive for interior rolling load, on, above or below grade, lateral shear and over recommended porous substrate installations and



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in accordance with Roppe's recommendations in order for the product warranty to be in effect. 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. Rop-Cord must not be used in kitchens or in any area that is exposed to oil, grease, vegetable fats, strong detergents, acids, solvent-based paints or coatings, gasoline, kerosene, or other similar solvents that can be absorbed in the tile and cause deterioration of the rubber. DO NOT allow the cross sectional face (side) of the tile to remain exposed. Roppe #39 Rubber 5/16" Glue-Down Carpet Edge is recommended for the indoor installation only of Rop-Cord Vulcanized Tile and Roppe #37 Rubber 3/8" Underlap Carpet Edge is recommended for indoor installation of Unvulcanized Tile, or other appropriate adaptor, threshold, and transition strips where necessary. The 5/16" and 3/8" reducer strips may have to be installed in certain areas prior to beginning the Rop-Cord installation. Rop-Cord can be used for indoor and outdoor installations below grade, above grade, or on grade; however, it should not be used in areas that are consistently wet or if there is hydrostatic pressure. Ensure any disinfectant, cleaning agent, dye, floor care product, pesticide, 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. DO NOT drag or move objects across the flooring or drop objects onto the flooring that may cause damage to the flooring. The flooring is not to come in contact with direct heat, such as radiators, hot ovens, or other heated equipment. When exposed to direct or indirect sunlight, and/or other outdoor elements, discoloration will occur. Color selections must be made from actual samples as

exact matching of color or shade may vary. Follow all local, state, and federal safety standards and practices.

5. General Preparation and Conditioning

5.1. Read the literature concerning the product description, product limitations, product installation, adhesive information, product maintenance, and warranty before installing Rop-Cord. 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. **Caution:** Direct heat from the sun and sunlight will cause material to expand, buckle or cup. Therefore, when installing outdoors, allow tile to remain inside and/or out of the sun. Only bring out enough material to cover the adhesive that is spread (50-75 square feet at a time) so tiles will lie flat while the adhesive cures. Remove all plastic wrapping and strapping from the pallets & remove Rop-Cord from carton in the installation area at least 48 hours prior to installation. The installation area, tile, 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. Rop-Cord is produced with random color tones; loose-lay tile in the room or area prior to spreading of adhesive to determine the proper layout to ensure the best overall appearance and to minimize small border cuts. Inspect all material for proper type, color, thickness, size and quality. DO NOT install material with obvious defects. A 1/16" gap must be left between each tile/rolls to allow for Rop-Cord expansion. If 1/16" gap is not left between each tile/rolls, Rop-Cord will expand, buckle or cup resulting in an installation failure. When Conduct the proper moisture emission and pH testing on the substrate. Proceed with the installation only when the conditions are proper and correct. A bond test using Roppe 445 Rop-Cord Synthetic Latex-Based Adhesive (for indoor



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and outdoor use) or Roppe 435 Solvent Free Epoxy Flooring Adhesive (indoor use only) 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 tile 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 tiles and accessories after other finishing operations, including painting, have been completed. If the back of the tile becomes soiled prior to installation, clean with a soft cloth dampened with a mild soap and water solution, rinse, let dry. Tile flooring may be installed over radiant heated floors, provided the surface temperature is maintained between 65°F (19°C) and 85°F (30°C). 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.

6.0 Subfloor/Substrate Inspection and Preparation

6.1.1 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, 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,

citrus 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"*.

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, oxidation, 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, citrus adhesive removers, or acid etching to clean the substrate. DO NOT install flooring over gypsum-based or plaster based leveling or patching compounds.



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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 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"*.

6.2.2 Concrete substrates on all Grade Levels must be tested in accordance with ASTM F-1869 to quantitatively determine the amount of moisture vapor emission at least one week prior to the installation. **Caution:** Calcium Chloride test cannot predict long-term moisture conditions of concrete slabs. Moisture testing only indicates moisture conditions at the time the tests are performed. Before conducting a Calcium Chloride 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 Calcium Chloride tests for the first 1,000 sq. ft. and one additional test for each 1,000 sq. ft. or fraction thereof per grade level (on, below or above grade). The moisture emission shall not exceed 4.0 pounds per 1,000 square feet per 24 hours. If the substrate does not meet the moisture emission requirement, 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 3,500 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



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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 3,500 psi after 28 days. Some underlayments may fail under excessive weight; an epoxy caulking 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 for concrete 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



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determine if the subfloor is acceptable to receive the flooring. Refer to 6.2.1.

6.2.4 Cementitious Terrazzo and ceramic floors to be used as subfloors/substrates are to follow the procedures recommended for concrete in 6.2.2. 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 3,500 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. Refer to 6.2.1.

6.2.5 Metal floors to be used as subfloors/substrates must be thoroughly cleaned of any residue, oil, paint, 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 Information

6.3.1 Roppe 445 Rop-Cord Synthetic Latex-Based Adhesive.

Roppe 445 Rop-Cord adhesive is a Synthetic Latex-Based Adhesive, which is water resistant when completely cured and made specifically for permanent indoor and outdoor installations of Rop-Cord Vulcanized and Non-vulcanized tile or rolls over on or above grade porous substrates, excluding metal and other non-porous substrates, nor in areas where Rop-Cord will be exposed to lateral shear stress or rolling loads. Rain or exposure to moisture within 72 hours after installation may slow the set up time, and may adversely affect the adhesive. Spread coverage using a 1/8" x 1/8" x 1/8" square notch trowel is approximately 75 square feet. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Adhesive is available in 1-gallon and 5-gallon pails. Shelf life is one year stored at 70°F (21°C) in an unopened container. Remove excess adhesive and clean tools with non-flammable solvent. Follow the manufacturer's recommended safety procedures when using non-flammable solvent. Roppe 445 Rop-Cord Adhesive is freeze/thaw stable to 0°F; however, it is recommended to protect all adhesive products from freezing. If frozen, DO NOT stir until material has completely thawed. Label information is in English and Spanish. Caution: DO NOT use near any flame, sparks, battery or electrically operated equipment, or any other apparatus that could generate a spark or static electricity that could ignite the vapors. Read all MSDS information and follow the proper safety procedures. Rop-Cord is not to be exposed to wheeled conveyances, lateral shear stresses or rolling loads of any kind when Roppe 445 Rop-Cord Adhesive has been used. Interior installations that may be subjected to heavy traffic by wheeled conveyances, lateral shear stress, or rolling loads, or over metal and other non-porous substrates, Roppe 435 Solvent Free Epoxy Flooring (indoor use only) Adhesive must be used.



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Roppe 445 Rop-Cord Adhesive Calculated VOC's according to California Rule #1168: 2.41 grams per liter of coating.

6.3.2 Roppe 435 Solvent Free Epoxy Flooring Adhesive

Roppe 435 Solvent Free Epoxy Flooring Adhesive is a solvent free, non-flammable, high performance epoxy adhesive that can be used for indoor installations only of Rop-Cord installations over porous and non-porous substrates, and must be used when installing Rop-Cord.

Exposure to moisture/cleaning within 72 hours after installation may slow the set up time, and may adversely affect the adhesive. Spread coverage using the 1/16" x 1/16" x 1/16" square notch trowel is approximately 100 square feet on a smooth, porous substrate. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Adhesive is available in 1-quart and 1-gallon pails. Shelf life is one year at 70°F (21°C) in an unopened container. 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. A bond failure will not 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.

6.4 Adhesive Application and Product Installation

6.4.1 Rop-Cord Installation Using Roppe 445 Rop-Cord Synthetic Latex-Based Adhesive

Read all installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. Do Not use near any flame, sparks, battery or electrically operated equipment, or any other apparatus that could generate a spark or static electricity. Pour the contents of the container onto the substrate and spread evenly using a 1/8" x 1/8" x 1/8" square notch trowel, being careful to leave no puddles of adhesive. Before installing Rop-Cord tiles, allow the adhesive to "tack up" approximately 10 minutes. However, do not allow adhesive to dry preventing transfer to Rop-Cord's backing resulting in an installation failure. **Caution:** "Tack up" time, open time, and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity, and proper conditioning of the adhesive. DO NOT spread more adhesive than be covered before the adhesive cures. The tiles are normally installed in an alternating parquet pattern either perpendicularly or diagonally. Place the tiles into the tacky adhesive. Press from the center of the tile outwards to exude entrapped air and to embed the tile into the adhesive. Loosely abut each tile leaving approximately 1/16" between each tiles/rolls ensuring the tiles are not pressed together tightly. If 1/16" gap is not left between each tile/rolls, Rop-Cord will expand, buckle or cup resulting in an installation failure. **Caution:** DO NOT fit the tiles tightly together. Since these are rubber tiles, the tiles will spread out slightly when rolled. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible. 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 adhesive with a cloth dampened with warm soapy water or paint thinner before the adhesive cures. Periodically inspect the flooring to ensure there has been no shifting of the tiles to produce either gaps between the tiles or buckling of the tiles. Periodically lift the tiles to ensure proper adhesive transfer, which should be at least 90%



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coverage. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. Borders and other specialty cut tiles are to be cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. Forcing incorrectly sized tiles into smaller areas will cause buckling of the tile. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Roll and cross roll each section of tile laid with a 100-pound 3-section roller within 30 minutes after the tile section has been installed. Re-roll 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 tiles 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. Roll and cross roll a second time approximately 30 minutes after the initial rolling. There is to be no foot traffic on the floor for at least 24 hours. Rop-Cord is not to be exposed to wheeled conveyances, lateral shear stresses, rolling loads or metal or non-porous substrates of any kind when Roppe 445 Rop-Cord Adhesive has been used. Protect flooring from damage.

6.4.2 Roppe Installation Using Roppe 435 Solvent Free Epoxy Flooring Adhesive
Read all installation literature before proceeding. Follow safety precautions on the adhesive label and Material Safety Data Sheet. Must have adequate ventilation. DO NOT mix partial units of this adhesive, because the ratio of Part A to Part B is not 1:1. Roppe 435 Solvent Free Epoxy Flooring Adhesive is packaged in two separate containers marked Part A (epoxy resin) and Part B (polyamide resin, hardener). 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. A slow speed, 200 RPM maximum,

drill with an attached mixing paddle may also be used. Mix 4 minutes. After mixing, the adhesive must be one consistent and solid color. **Caution:** Higher mixing speeds and/or longer mixing time will reduce the open 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 stand in the container. Immediately after mixing, pour the contents onto the substrate. Immediately spread the adhesive evenly using a 1/16" x 1/16" x 1/16" square notch trowel, being careful to leave no puddles of adhesive. If the substrate has been shot blasted or a rough texture underlayment has been applied, additional adhesive may have to be purchased to ensure proper coverage. Spreading large areas in excess of 150 square feet could possibly allow the adhesive to cure or setup before the tile is installed which would result in a bond failure. **Caution:** Open time, and curing characteristics will vary upon the type of substrate, substrate temperature, ambient temperature, humidity, and proper conditioning of the adhesive. Observe the adhesive to ensure the adhesive has not surpassed its open time and has not begun to cure. The tiles are normally installed in an alternating parquet pattern either perpendicularly or diagonally. Place the tiles into the tacky adhesive. Press from the center of the tile outwards to exude entrapped air and to embed the tile into the adhesive. Loosely abut each tile leaving approximately 1/16" between the tiles ensuring the tiles are not pressed together tightly. **Caution:** DO NOT fit the tiles tightly together. Since these are rubber tiles, the tiles will spread out slightly when rolled. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible. If the adhesive is bleeding or oozing at the seams, either too much adhesive is being applied, or the adhesive is too "wet". If the adhesive is too "wet", allow additional time for the adhesive to "tack up", being careful not to allow the adhesive to cure. IMMEDIATELY remove excessive uncured adhesive with a cloth dampened with warm soapy water or denatured alcohol before the epoxy cures. **Caution:** DO



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Rubber Floor Tile



NOT allow the adhesive to cure on the surface of the tile. Adhesive allowed to cure on the surface is extremely difficult to remove and can discolor the flooring. Periodically inspect the flooring to ensure there has been no shifting of the tiles to produce either gaps between the tiles or buckling of the tiles. Periodically lift the tiles to ensure proper adhesive transfer, which should be at least 90% coverage. Observe the adhesive to ensure that the adhesive has not surpassed the open time and has not begun to cure. Borders and other specialty cut tiles are to be cut to fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. Forcing incorrectly sized tiles into smaller areas will cause buckling of the tile. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. Lay the border tiles within the adhesive open time. Roll and cross roll each section of tile laid with a 100-pound 3-section roller approximately 30 minutes after the tile section has been installed. 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 tiles 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. Roll and cross roll a second time approximately 30 minutes after the initial rolling. There is to be no foot traffic on the floor for at least 24 hours and no wheeled conveyances for at least 48 hours. Protect flooring from damage.

7. Maintenance/Precautions

DO NOT perform any maintenance or expose the product to water, rain, cleaning agents, or other materials for at least 72 hours after installation to allow the adhesive to properly cure. Remove any covering that may have been used to protect the floor. The flooring must be properly cleaned before it is released for normal use. Sweep and vacuum to remove dirt and other particulate. Rop-Cord should be cleaned weekly

to maximize the life of the product. If left unclean, sand, grit, and grime on the surface and between the tiles can become very abrasive on the wear layer and on the adhesive bond reducing the life of the product. Interior flooring may be swept, vacuumed, spot cleaned, or shampooed. A neutral pH cleaning solution or a mild soap and water solution may be used for shampooing. DO NOT use highly alkaline cleaners, highly acidic cleaners, or sweeping compounds containing oils or solvents. DO NOT allow cleaning solutions or other chemicals that could deteriorate the adhesive to stand on the flooring. Spills must be immediately removed from the flooring. Exterior installations can be simply hosed off and left to dry.

8. Availability and Cost

8.1 Products are available through Roppe distributors. Contact Roppe Customer Service 800-537-9527 or visit www.roppe.com for a distributor near you.

8.2 Samples

Samples may be obtained by may be obtained by calling Roppe Customer Service at 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 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's Rop-Cord Vulcanized and Non-Vulcanized Tile is warranted for a period of five (5) years from date of installation to be free of defects in material and workmanship. Rop-Cord has a ten (10) year Limited Wear Warranty. Rop-Cord has a lifetime warranty against delamination. Roppe will not warranty Rop-Cord products against fading or discoloration when exposed to direct sunlight or indirect sunlight. This Limited Warranty only applies to Rop-Cord, which has been installed, maintained, and used strictly in accordance with



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Roppe's written instructions and is valid only under normal wear and traffic conditions in a use for which it was designed. Instructions may be obtained from a Roppe distributor or by writing Roppe, Attention: Internal Sales Manger, P.O. Box 1158, Fostoria, OH 44830-1158. 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. Installation of material installed with obvious visual defects is not warranted. Buyer's sole and exclusive remedy for breach of this Limited Warranty shall be a pro rata credit, based on the period remaining in this Limited Warranty, toward the purchase of new Rop-Cord, or in the event Rop-Cord is not available, other Roppe tile. Replacement credit shall be equal to the proportion of Limited Warranty time remaining multiplied by the current price of Rop-Cord or the last price if Rop-Cord is not available. 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 against Roppe, whether statutory, based in common law or in equity, and including, but not limited to, direct, indirect, special, incidental, and consequential damages. In order to use this Limited Warranty, Buyer must present this Limited Warranty and proof of time of purchase to Buyer's Roppe representative. 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, improper installation, or improper maintenance, accident or act of God. This Limited Warranty is valid only if Rop-Cord is installed pursuant to the Limited Warranty, using Roppe's recommended adhesive. These warranties are expressly in lieu of any other warranties expressed or implied, including, but not limited to any implied warranty of merchantability or fitness for a particular purpose. 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. Rop-Cord is not designed for use in or near commercial kitchens. Read the Rop-Cord Product Data information concerning Product Limitations, Installation, and Maintenance available from a Roppe Distributor or Roppe Customer Service Representative.

* Limited Wear Warranty Terms (Products Type: Rop-Cord Vulcanized and Non-Vulcanized 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. 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.

