

Roppe Rop-Cord® Rubber Tile



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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 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 RopCord 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 RopCord expansion. If 1/16" gap is not left between each tile/rolls, RopCord 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 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.

6.2 Subfloor/Substrate Inspection and Preparation



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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".

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 tests 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 Roppe 445 Rop-Cord Synthetic Latex-Based Adhesive or Roppe 435 Solvent Free Epoxy Flooring Adhesive. 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



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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 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



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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.

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



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from occurring.

6.3 Adhesive Application

6.3.1 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 125-185 square feet per gallon applied 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 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.

6.3.2 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 RopCord will be exposed to lateral sheer 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 @ 70°F (21°C) in an unopened container. Remove excess adhesive and clean tools with denatured alcohol. Follow the manufacturers recommended safety procedures when using. 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. RopCord 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.



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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.

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

6.4 Adhesive Application and Product Installation

6.4.1 Roppe 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 RopCord'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, RopCord 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 denatured alcohol 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% 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 thirty 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



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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. RopCord 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 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



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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.

