

Roppe ESD Static Control Vinyl Flooring



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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 the tile. All materials including recommended adhesive are to be delivered to the installation location in its original packaging with labels intact. DO NOT stack pallets. 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). Remove all plastic wrapping and strapping from the pallets in the installation area at least 48 hours prior to installation. For proper acclimatization, remove the tile from the cartons and stack evenly on a smooth dry surface with each stack no more than 18" high. When stacking tiles prior to and during installation, place the tiles face-to-face and sanded back-to-sanded back to prevent the sanded back of the tiles from being contaminated. Protect the product from damage. The installation area, tile, adhesive, and welding rods, if required, are to be maintained between 65°F (19°C) and 85°F (30°C) for at least 48 hours before installation, during installation, and 48 hours after the installation. Maintain room temperatures between 65°F (19°C) and 85°F (30°C) thereafter. If temperatures other than Roppe's requirements become an issue, contact Roppe's Technical Service Department prior to installation. Notice: 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 and to minimize small border cuts. Inspect all material for proper type and color. 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. 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 ROP605 two-part ESD epoxy or ROP604 single-part ESD acrylic 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 tile from the substrate with adhesive bonding to the tile and the substrate. 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 clean soft cloth dampened with clean water or denatured alcohol, and allow to completely dry. Tile 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 (excluding ROP604) affected.

Notice: You will find an arrow on the back, sanded side, of each tile. It is important that each tile be installed with the arrow in the same direction. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing with 3M 5300 Blue Cleaner pads and occasionally 3M 7200 Brown Stripper



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Pads with a 175-300 RPM buffer. **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, 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".

6.2.2 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 either ROP604 Acrylic ESD Adhesive or ROP605 Two-Part ESD Epoxy. 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



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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 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



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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.

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 warrant 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



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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 Roppe ROP605 Two-Part ESD Epoxy and ROP604 ESD Acrylic Adhesive

6.3.2 Roppe ROP605 Two-Part ESD Epoxy: ROP605 is recommended for the installation of Roppe's ESD Static Control Solid Vinyl tile. ROP605 is a non-flammable, high performance epoxy adhesive for indoor installations over porous and non-porous substrates on grade, below grade, or above grade, and available in both quarts and gallon containers. **Caution:** ROP605 Two-Part Epoxy only must be used in areas subjected to rolling loads, lateral shear stress and over non-porous substrates including but not limited to metal. When used on non-porous substrates, the adhesive must be allowed to "tack up", but do not allow adhesive to dry. Spread coverage using the 1/32" deep x 1/16" open x 1/32" square notch trowel provided is approximately 125 -185 square feet on smooth, steel troweled concrete or a non-porous substrate. Over porous or rough substrates, a 1/16" x 1/16" x 1/16" flat "V" notch trowel is required. The spread rate for this trowel is approximately 100-125 square feet. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. Although the epoxy components are non-freezing, the adhesive must be allowed to stabilize to ambient temperature before mixing. Shelf life is one year @ 70°F (21°C) from adhesive manufacturing date in an unopened container. It is extremely important that adhesive inventory is checked to ensure within manufacturing date guidelines. Wet 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 adhesive to cure on the surface of the tile. 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 ROP605 Two-Part ESD Epoxy Calculated VOC's according to California SCAQMD Rule #1168: Part A: 9 grams per liter of coating. Roppe ROP605 Part B: 20 grams per liter of coating. Part A & B Calculated VOC's when mixed: 14.3 grams per liter of coating.

6.3.3 ROP604 Acrylic ESD Adhesive: ROP604 Acrylic ESD Adhesive is recommended for the installation of Roppe's ESD Static Control Solid Vinyl tile. ROP604 is a non-flammable; one-part acrylic base adhesive for indoor installations over approved concrete and wood subfloors only, on grade or above grade, and is available in both quarts and gallon containers. **Caution:** ROP605 Two-Part Epoxy only must be used in areas subjected to rolling loads, lateral shear stress and over non-porous substrates including but not limited to metal, and below grade. ROP604 must be applied using a 1/16" x 1/16" x 1/16" square notch trowel over either porous or



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rough substrates. The spread rate for this trowel size is approximately 125-185 square feet. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. The adhesive is freeze/thaw stable to 5 cycles at 0°F (-18°C); however, it is recommended to protect all adhesive products from freezing. If frozen, DO NOT stir until material has completely thawed. Shelf life is one year @ 70°F (21°C) from adhesive manufacturing date in an unopened container. It is extremely important that adhesive inventory is checked to ensure within manufacturing date guidelines. Wet 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 adhesive to cure on the surface of the tile. 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 ROP604 Acrylic ESD Adhesive Calculated VOC's according to California Rule #1168: 37 grams per liter of coating.

6.4 Adhesive Application and Product Installation

6.4.1 Roppe ESD Static Control Vinyl Flooring installation using Roppe ROP605 Two-Part ESD Epoxy:

Read all installation literature before proceeding. Prior to adhesive application, dry lay the flooring to ensure desired aesthetics. **Caution:** ROP605 Two-Part Epoxy only must be used in areas subjected to rolling loads, lateral shear stress and over non-porous substrates including but not limited to metal, and below grade. When stacking tiles prior to and during installation, place the tiles face-to-face and sanded back-to-sanded back to prevent the sanded back of the tiles from becoming contaminated and to protect the face from damage. Follow safety precautions on the adhesive labels and Material Safety Data Sheet's. 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 ROP605 Two-Part ESD Epoxy 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**. Then Turn Part "B" upside down and fully drain adhesive into Part A. Mix the combined parts 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 3 minutes**. After mixing, there must be no streaking of adhesive, which must be one consistent solid color. **Caution:** Higher mixing speeds and/or longer mixing time will reduce the open time and can cause premature curing of the adhesive; however, if not mixed long enough, the adhesive will not properly cure. 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 with the 1/32" deep x 1/16" open x 1/32" square notch trowel provided for smooth substrates while 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 may be required. Caution: If too much adhesive is applied, oozing and telegraphing may occur along with adhesive displacement when the tile is rolled or subjected to rolling loads or lateral shear stress, resulting



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in loose areas and adhesive telegraphing. Spreading large areas of adhesive in excess of 175 square feet could possibly allow the adhesive to cure or setup before the tile is installed which would result in a bond failure. Allow the adhesive to “tack up” which takes approximately 15 minutes at 70°F (21°C) and 50% humidity. **Caution:** “Tack up” time, open time, and curing characteristics will vary upon the type of substrate, temperature of the substrate, ambient temperature, humidity, proper mixing of the adhesive and proper conditioning of the adhesive. Observe the adhesive to ensure the adhesive has not surpassed its open time and started to cure. **Notice:** You will find an arrow on the back, sanded side, of each tile. It is important that each tile be installed with the arrow in the same direction installing the sanded side with the arrow into the adhesive. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing with 3M 5300 Blue Buffer Pads using a 175-300 RPM buffer followed with Red and White pads for polishing. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile, adhesive displacement and telegraphing, and to not also track the epoxy adhesive onto the surface of the tile. 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 the excessive wet adhesive with a clean cloth dampened with warm soapy water or denatured alcohol before the epoxy cures. After cleaning with denatured alcohol, rinse with a clean soft cloth dampened with clean water. DO NOT allow the epoxy to cure on the surface of the tile; it will be extremely difficult to remove. **Note:** If heat welding, the vinyl welding rods will not adhere to adhesive left remaining in the pre-grooved seam. Periodically, lift the tile to check for proper adhesive transfer. There should be at least a 90% transfer of adhesive on the back of the tile. Also, observe the adhesive to ensure the adhesive has not surpassed its open time and started to cure. Borders and other specialty cut tiles must be scribed and cut fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. 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. 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 its open time. Inspect each section laid after rolling to check for raised edges. Roll and cross roll a second time approximately 30 minutes after the initial rolling. If necessary, roll and cross roll again. There is to be no foot traffic on the floor for at least 48 hours and no wheeled conveyances for at least 3 days. Protect flooring against damage.

6.4.2 Roppe Static Control ESD Vinyl Tile installation using Roppe ROP604 Acrylic ESD Adhesive:

ROP604 Acrylic ESD Adhesive is recommended for the installation of Roppe’s Static Control ESD Solid Vinyl tile. ROP604 is a non-flammable; one-part acrylic base adhesive for indoor installations over approved concrete and wood substrates only, on grade, or above grade, and available in both quarts and gallon containers. **Caution:** ROP605 Two-Part Epoxy only must be



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used in areas subjected to rolling loads, lateral shear stress and over non-porous substrates including but not limited to metal, and below grade. ROP604 must be applied using a 1/16" x 1/16" x 1/16" square notch trowel over either porous or rough substrates. The spread rate for this trowel size is approximately 125-185 square feet. Coverage will vary according to the type of surface, surface texture, spreading angle, and adhesive temperature. The adhesive is freeze/thaw stable to 5 cycles at 0°F (-18°C); however, it is recommended to protect all adhesive products from freezing. If frozen, DO NOT stir until material has completely thawed. Shelf life is one year @ 70°F (21°C) from adhesive manufacturing date in an unopened container. It is extremely important that adhesive inventory is checked to ensure within manufacturing date guidelines. Wet 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 adhesive to cure on the surface of the tile. Caution: If too much adhesive is applied, oozing and telegraphing may occur along with adhesive displacement when the tile is both rolled & subjected to traffic, resulting in loose areas and adhesive telegraphing. Spreading large areas of adhesive in excess of 175 square feet could possibly allow the adhesive to cure or setup before the tile is installed which would result in a bond failure. Allow the adhesive to "tack up" which takes approximately 15 minutes at 70°F (21°C) and 50% humidity. **Caution:** "Tack up" time, open time, and curing characteristics will vary upon the type of substrate, temperature of the substrate, ambient temperature, humidity, proper mixing of the adhesive and proper conditioning of the adhesive. Observe the adhesive to ensure the adhesive has not surpassed its open time and started to cure. **Notice:** You will find an arrow on the back, sanded side, of each tile. It is important that each tile be installed with the arrow in the same direction installing the sanded side with the arrow into the adhesive. If the tiles are not laid in the same direction, the reflection of light will cause an optical illusion, making the surface appear to be different shades. If the tiles are installed at random, disregarding the arrows on the back, it will require extensive buffing with 3M 5300 Blue Buffer Pads using a 175-300 RPM buffer followed with Red and White pads for polishing. When laying the flooring, use a kneeling board, or for best results, work off the flooring whenever possible to avoid shifting of the tile. The adhesive is bleeding or oozing at the seams, either too much adhesive is being applied or the adhesive is too wet. Immediately remove the excessive wet adhesive with a clean cloth dampened with warm soapy water or denatured alcohol before the adhesive cures. After cleaning with denatured alcohol, rinse with a clean soft cloth dampened with clean water. DO NOT allow adhesive to cure on the surface of the tile; it will be extremely difficult to remove. **Note:** If heat welding, the vinyl welding rods will not adhere to adhesive left remaining in the pre-grooved seam. Periodically, lift the tile to check for proper adhesive transfer. There should be at least a 90% transfer of adhesive on the back of the tile. Also, observe the adhesive to ensure the adhesive has not surpassed its open time and started to cure. Borders and other specialty cut tiles must be scribed and cut fit snugly, not tightly, against the wall, threshold, transition strip, fixtures, or other obstacles. DO NOT wait until all the main aisle flooring has been installed to begin laying the borders. 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. 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



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have surpassed its open time. Inspect each section laid after rolling to check for raised edges. Roll and cross roll a second time approximately 30 minutes after the initial rolling. If necessary, roll and cross roll again. There is to be no foot traffic on the floor for at least 48 hours and no wheeled conveyances for at least 3 days. Protect flooring against damage.

6.5 Grounding & Grounding Diagram

6.5.1 Grounding: To ground the conductive and static dissipative flooring to a known ground, use the 1" wide x 0.004" thick x 18" long copper foil strips, supplied by Roppe and place approximately 9" of the strip into Roppe ROP605 two-part ESD epoxy or ROP604 single-part ESD acrylic adhesive while the adhesive is wet in order to achieve a 100% transfer to the copper foil backing, under the tile nearest the ground point (center copper foil in the center of the tile). Roppe ROP605 two-part ESD epoxy or ROP604 single-part ESD acrylic adhesive must also be applied to the top section of the copper foil strips in order to complete the conductivity and to bond the tile to directly to the copper foil strips. Allow the other half, approximately 9", of the length of the strip to "pigtail" up the wall to permit an electrician to mechanically connect the copper foil to the ground point. If using a specifically supplied ESD facility grounding system, a ground bus bar would be placed near the floor where any ESD ground can be connected. If bus bars are not used, the ESD ground wire is normally #10 or #12 stranded copper wire, supplied by the electrical contractor, is placed inside the wall from a ground bus and a hole is cut into the drywall for the wire to exit at the floor/wall junction where the copper foil has been placed. Grounding to the green wire ground in the wiring system may also be used; Refer to the Grounding Diagram in section 6.5.2. Use longer copper foil strips if necessary. Place the copper strips approximately every 2000 square feet along the perimeter of the floor or where the ground points are located and or at least one per room. The ground connection may also be made directly to an exposed steel support column. The connection must be mechanically secured to the column. The point of contact on the column must be clean and dry, and free of any paint or other substance that would prevent adequate metal contact. Protect or enclose all connections as required by safety codes. Bridge expansion joints, saw-cuts etc with a copper strip from a tile on one side of the expansion joint, saw-cut etc to a tile on the other side of the expansion joint, saw cut etc to ensure continuity. Resistance testing should be conducted in accordance to the test method, voltage, and conditions specified.

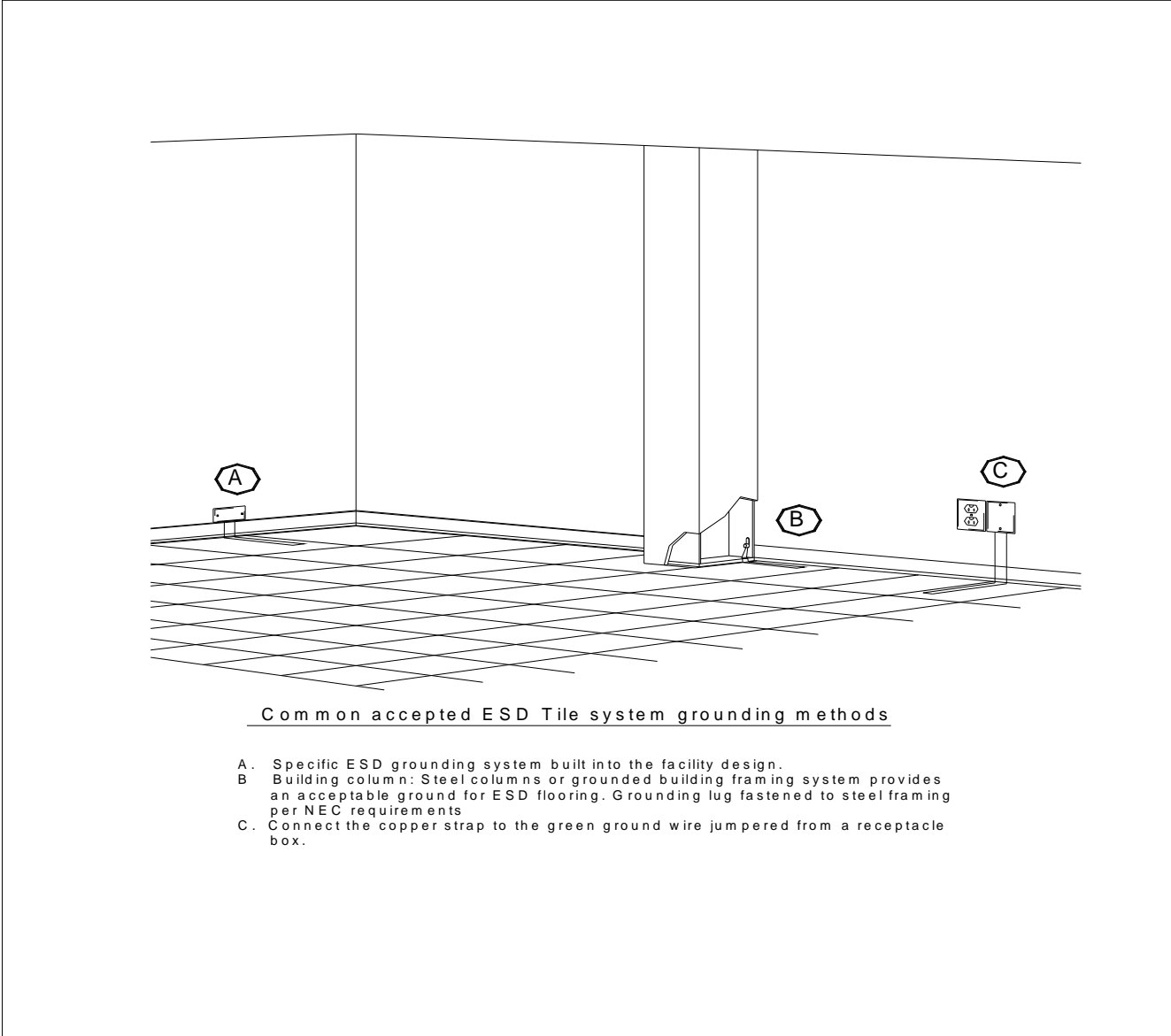
6.5.2 Grounding Methods Diagram: See two (2) diagrams at end of document.



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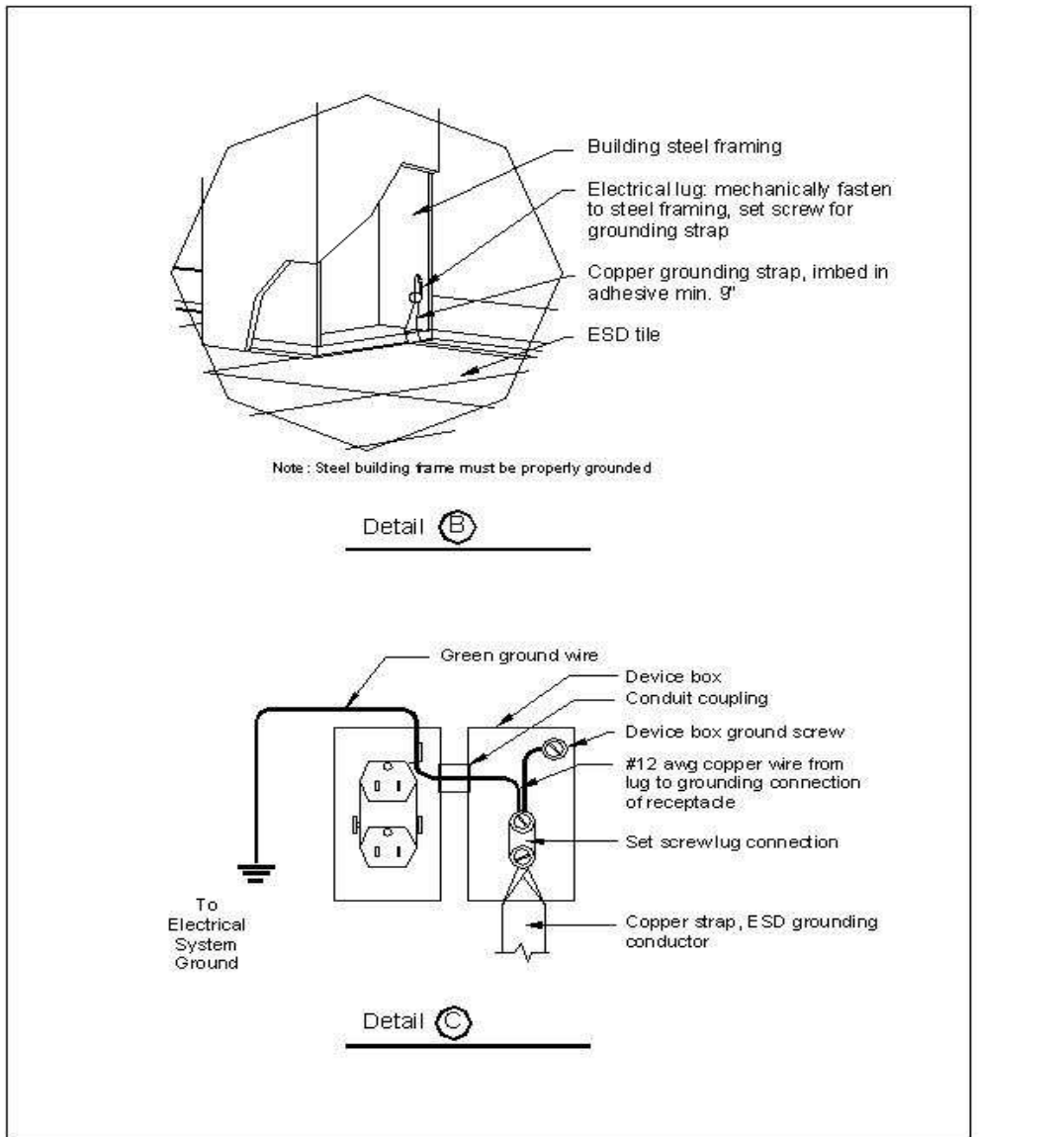
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