**DIVISION 09 – FINISHES**

**SECTION 09 65 16 - RESILIENT SHEET FLOORING**

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BEGINNING OF SECTION 09 65 16

**PART 1 – GENERAL**

1. GENERAL PROVISIONS
   1. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
2. DESCRIPTION OF WORK
   1. **Work Included:** Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:
      1. Rubber Tile and Sheet Flooring
      2. Substrate Preparation
   2. **Related Work:** The following items are not included in this Section and are specified under the designated Sections:
      1. Section 03 30 00 CAST-IN-PLACE CONCRETE for concrete substrate; slab surface tolerances
      2. Section 06 10 00 ROUGH CARPENTRY for plywood substrate and surface tolerances
      3. Section 09 69 00 ACCESS FLOORING for resilient floor covering for access panels
   3. **References (Industry Standards):**
      1. ASTM International (ASTM):
         1. ASTM F1859, Standard Specification for Rubber Sheet Floor Covering without Backing
         2. ASTM D2047, Standard Test Method for Static Coefficient of Friction as Measured by the James Machine
         3. ASTM D2240, Standard Test Method for Rubber Property – Durometer Hardness
         4. ASTM D3389, Standard Test Method for Coated Fabrics Abrasion Resistance (Rotary Platform Abrader)
         5. ASTM E648, Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
         6. ASTM E662, Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
         7. ASTM G21, Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi
         8. ASTM F386, Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces
         9. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring
         10. ASTM F970, Standard and Modified Test Method for Static Load Limit
         11. ASTM F1514, Standard Test Method for Measuring Heat Stability of Resilient Flooring by Color Change
         12. ASTM F1515, Standard Test Method for Measuring Light Stability of Resilient Flooring by Color Change
         13. ASTM F2199, Standard Test Method for Determining Dimensional Stability of Resilient Floor Tile After Exposure to Heat
         14. ASTM F2055, Standard Test Method for Size and Squareness of Resilient Floor Tile by Dial Gauge Method
         15. ASTM E492, Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine
         16. ASTM E90, Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
         17. ASTM E2179, Standard Test Method for Laboratory Measurement of the Effectiveness of Floor Coverings in Reducing Impact Sound Transmission Through Concrete Floors
         18. ASTM F710, Standard Practice for Preparing Concrete to Receive Resilient Flooring
         19. ASTM F1482, Standard Guide to Wood Underlayments products Available for Use Under Resilient Flooring
         20. ASTM F1869, Standard Test Method for Measuring Moisture Vapor Emissions Rate of Concrete Subfloor using Anhydrous Calcium Chloride
         21. ASTM F2170, Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs using in situ Probes
      2. **National Fire Protection Association (NFPA):**
         1. NFPA 253, Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
         2. NFPA 258, Test Method for Specific Density of Smoke Generated by Solid Materials
3. SUBMITTALS
   1. **General:** Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
   2. **Product Data:** Submit manufacturer's technical data sheet, care & maintenance document, submittal and/or warranty for each material and accessory proposed for use (available at [www.roppe.com](http://www.roppe.com)).
   3. **Samples:** Submit representative samples of each product specified for verification, in manufacturer’s standard size samples of each resilient product color, texture and patter required.
4. QUALITY ASSURANCE
   1. **Manufacturer Qualifications:** Provide resilient flooring materials manufactured in the United States of America by a firm with a minimum of 10 years’ experience with resilient flooring materials of type equivalent to those specified.
      1. Provide resilient flooring products, including wall base, accessories and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
      2. Manufacturer shall be capable of providing technical training and technical field service representation.
   2. **Installer Qualifications:** Installer must be professional, licensed, insured and acceptable to manufacturer of resilient flooring materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance) certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project.
   3. **Sustainable Design Requirements:**
      1. Roppe offers our IMPACT Program for returning jobsite scrap
      2. Envire Rubber Sheet is 100% Recyclable
      3. Envire Rubber Sheet and accessories that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health
      4. Envire Rubber Sheet is SCS FloorScore® Certified and meets California Specifications Section 01350
      5. Envire Rubber Sheet is Manufactured in a Facility that is ISO 14001 Certified
      6. Envire Rubber Sheet is free of materials known to be teratogenic, mutagenic or carcinogenic including halogens, asbestos and chlorines
5. DELIVERY, STORAGE, AND HANDLING
   1. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's recommendations. Protect from damage due to weather, excessive temperatures, and construction operations.
   2. Deliver materials sufficiently in advance of installation to condition materials to the required temperature for 48-hours prior to installation.
6. PROJECT CONDITIONS
   1. Install Envire Rubber Sheet and Tile after other finishing operations, including painting, have been completed.
   2. Maintain temperature at service levels and/or the ambient temperature must remain steady (± 10° F) between 65° F and 85° F for at least 48-hours prior to, during and until substantial completion.
   3. Maintain relative humidity at service levels, or between 40% and 65% RH.
   4. Avoid conditions in which dew point causes condensation on the installation surface.
7. WARRANTY
   1. Provide manufacturer’s standard limited commercial warranty to cover manufacturing defects

**PART 2 - PRODUCTS**

*Note To specifier: remove and amend sections as necessary.*

1. MANUFACTURER
   1. Basis-of-Design: Roppe Corporation | 1602 N Union St. | Fostoria, OH 44830 | P: (800) 537-9527
   2. Substitutions: No substitutions permitted
2. PRODUCTS
   1. HOMOGENEOUS RESILIENT RUBBER SHEET FLOORING
      1. Roppe ENVIRE SHEET RUBBER FLOORING
      2. Specify Color by Number and Name: *(remove all but the color selecting)* S100 black, S118 peacock, S122 natural, S123 charcoal, S137 cinnabar, S139 deep navy, S161 snow, S174 smoke, S184 almond, S186 red, S191 camel, S194 burnt umber, S617 terracotta, S618 aubergine, S621 merlin, S623 nutmeg, S627 mariner, S638 cadet, S639 beigewood, S642 jonquil, S644 sunbeam, S646 gecko, S648 pear green, S649 sweet basil, S654 lagoon, S655 peaceful blue, S656 bluebell, S659 grape, S660 citrus, S662 envy, S663 aged fern, S664 blue jay
      3. ASTM F1869, Standard Specification for Rubber Sheet Floor Covering without Backing; Type 1
      4. Sheet/Roll Width: 6 Feet (1.82 m), material contains 1” selvage edge on each side for trimming
      5. Sheet/Roll Length: 50 Feet (15.24 m)
      6. Sheet/Roll Thickness: 0.100” (2.5 mm)
      7. Sheet/Roll Surface: Smooth
      8. ASTM F648/NFPA 253, Critical Radiant Flux; Class 1, > 0.45 W/cm2
      9. ASTM F662/NFPA 258, Smoke Density; Passes, < 450
      10. ASTM D2047, Static Coefficient of Friction; > 0.6
      11. ASTM F970, Static Load Limit; Passes 250 PSI load with less than 0.005” residual indentation
      12. ASTM F970, Modified Static Load Limit; Passes 1500 PSI with less than 0.005” residual indentation
      13. ASTM F1914, Color Heat Stability; Passes, < 8.0 ΔE
      14. ASTM F1915, Color Light Stability; Passes, < 8.0 ΔE
      15. ASTM G21, Resistance to Fungi; Excellent
      16. ASTM E492/E989, Acoustical (Impact Insulation Class) Impact; IIC 50
      17. ASTM E90/E413, Acoustical (Sound Transmission Class) Airborne; STC 62
      18. ASTM E2179, Effectiveness of Floor Covering; ΔIIC 11
      19. Roppe offers our IMPACT Program for returning jobsite scrap
      20. Envire Rubber Sheet is 100% Recyclable
      21. Envire Rubber Sheet and accessories that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health
      22. Envire Rubber Sheet is SCS FloorScore® Certified and meets California Specifications Section 01350
      23. Envire Rubber Sheet meets NSF 332 Gold Criteria
      24. Envire Rubber Sheet meets CHPS Criteria
      25. Envire Rubber Sheet is manufactured in the U.S.A.
      26. Envire Rubber Sheet is manufactured in a Facility that is ISO 14001 Certified
      27. Envire Rubber Sheet is free of materials known to be teratogenic, mutagenic or carcinogenic
      28. Envire Rubber Sheet is free of Halogens
      29. Envire Rubber Sheet is free of Asbestos
      30. Envire Rubber Sheet is free of Phthalates
      31. Envire Rubber Sheet is free of Heavy Metals
      32. Envire Rubber Sheet is free of any Red List Chemicals
      33. Envire Rubber Sheet is free of PVC
   2. HOMOGENEOUS RESILIENT RUBBER TILE FLOORING
      1. Roppe ENVIRE TILE RUBBER FLOORING
      2. Specify Color by Number and Name: *(remove all but the color selecting)* S100 black, S118 peacock, S122 natural, S123 charcoal, S137 cinnabar, S139 deep navy, S161 snow, S174 smoke, S184 almond, S186 red, S191 camel, S194 burnt umber, S617 terracotta, S618 aubergine, S621 merlin, S623 nutmeg, S627 mariner, S638 cadet, S639 beigewood, S642 jonquil, S644 sunbeam, S646 gecko, S648 pear green, S649 sweet basil, S654 lagoon, S655 peaceful blue, S656 bluebell, S659 grape, S660 citrus, S662 envy, S663 aged fern, S664 blue jay
      3. ASTM F1344, Standard Specification for Rubber Floor Tile; Type 1 – B Mottled
      4. Tile Size: 24” (60.96 cm) x 24” (60.96 cm)
      5. Tile Thickness: 0.100” (2.5 mm)
      6. Tile Surface: Smooth
      7. ASTM F648/NFPA 253, Critical Radiant Flux; Class 1, > 0.45 W/cm2
      8. ASTM F662/NFPA 258, Smoke Density; Passes, < 450
      9. ASTM D2047, Static Coefficient of Friction; > 0.6
      10. ASTM F970, Static Load Limit; Passes 250 PSI load with less than 0.005” residual indentation
      11. ASTM F970, Modified Static Load Limit; Passes 1500 PSI with less than 0.005” residual indentation
      12. ASTM F1914, Color Heat Stability; Passes, < 8.0 ΔE
      13. ASTM F1915, Color Light Stability; Passes, < 8.0 ΔE
      14. ASTM G21, Resistance to Fungi; Excellent
      15. ASTM E492/E989, Acoustical (Impact Insulation Class) Impact; IIC 50
      16. ASTM E90/E413, Acoustical (Sound Transmission Class) Airborne; STC 62
      17. ASTM E2179, Effectiveness of Floor Covering; ΔIIC 11
      18. Roppe offers our IMPACT Program for returning jobsite scrap
      19. Envire Rubber Tile is 100% Recyclable
      20. Envire Rubber Tile and accessories that are easily cleaned and do not require coatings and stripping, or use chemicals that may be hazardous to human health
      21. Envire Rubber Tile is SCS FloorScore® Certified and meets California Specifications Section 01350
      22. Envire Rubber Tile meets NSF 332 Gold Criteria
      23. Envire Rubber Tile meets CHPS Criteria
      24. Envire Rubber Tile is manufactured in the U.S.A.
      25. Envire Rubber Tile is manufactured in a Facility that is ISO 14001 Certified
      26. Envire Rubber Tile is free of materials known to be teratogenic, mutagenic or carcinogenic
      27. Envire Rubber Tile is free of Halogens
      28. Envire Rubber Tile is free of Asbestos
      29. Envire Rubber Tile is free of Phthalates
      30. Envire Rubber Tile is free of Heavy Metals
      31. Envire Rubber Tile is free of any Red List Chemicals
      32. Envire Rubber Tile is free of PVC
   3. FLASHCOVE PREFABRICATED INTEGRAL COVE BASE
      1. Roppe FLASHCOVE WITH ENVIRE FLOORING as manufactured by FlashCove Prefabricated Bases Inc.
      2. Specify Color by Number and Name: *(remove all but the color selecting)* S100 black, S118 peacock, S122 natural, S123 charcoal, S137 cinnabar, S139 deep navy, S161 snow, S174 smoke, S184 almond, S186 red, S191 camel, S194 burnt umber, S617 terracotta, S618 aubergine, S621 merlin, S623 nutmeg, S627 mariner, S638 cadet, S639 beigewood, S642 jonquil, S644 sunbeam, S646 gecko, S648 pear green, S649 sweet basil, S654 lagoon, S655 peaceful blue, S656 bluebell, S659 grape, S660 citrus, S662 envy, S663 aged fern, S664 blue jay
      3. Toe Size: 3” (7.62 cm)
      4. Riser Size:
         1. 4” (10.16 cm)
         2. 6” (15.24 cm)
         3. Custom Sizes Available upon request
      5. Lengths: 10 Foot (3.05 m) Sections or minimum practical lengths
   4. FLASHCOVE STAINLESS STEEL CHIKLET CAP
      1. Lengths: 8 Foot (2.44 m) Sections
      2. Preformed Outside Corner with 6” Return
      3. Stainless Steel Type 304
      4. Industry Standard Brushed Finish #4
      5. 24 Gauge, nominal .024” ± .0015”
      6. Round Top Profile
3. INSTALLATION AND MAINTENANCE MATERIALS
   1. **Moisture Mitigation:** Moisture testing is required for all Envire Rubber Sheet & Tile installations. Mitigation should be performed if results indicate high levels of moisture. Recommended Moisture Mitigation Product:
      1. Excelsior MM-100, Moisture Mitigation provided by Roppe
         1. Unit Size: 2.5 Gallons
         2. Coverage: 1000 square feet per unit with one coat
         3. MM-100 is a water, solvent and VOC free, polyurethane-based moisture mitigation product used to treat concrete slabs with excessive moisture levels beyond what flooring adhesives allow.
         4. MM-100 can block moisture up to 20 lbs. MVER or 99% RH.
         5. MM-100 is a single component product, eliminating extensive mix times and concerns regarding pot life.
         6. MM-100 does not require aggressive concrete preparation, such as shotblasting or diamond grinding.
         7. MM-100 is a two coat system that is incredibly easy to apply and does not require any specialized equipment, its excellent coverage rates also make it incredibly cost effective.
         8. Despite being a two coat system, MM-100 is incredibly fast drying.
         9. Flooring or subsequent coatings can be installed in less than two hours.
         10. Backed by a 10 year material and labor warranty, MM-100 is a fast and easy solution for the moisture issues that commonly plague flooring installations.
   2. **Substrate Preparation Products:** Substrates should be prepared to properly receive the resilient flooring products being specified. Trowelable leveling and patching compounds that are latex-modified, Portland cement based or blended hydraulic cement based formulation. Recommended Substrate Preparation Products:
      1. Excelsior NP-230, Non-Porous Substrate Primer provided by Roppe
         1. Unit Size: 2.5 Gallons
         2. Coverage: 1000 Square Feet per unit with one coat
         3. Used over MM-100 to promote adhesion of cementitious materials
         4. Single component and fast drying to allow for quick and easy installation
         5. Contains an aggregate to provide mechanical bond for cementitious materials
      2. Excelsior CP-300, Cementitious Patch provided by Roppe
         1. Unit Size: 10 lb. Pail
         2. Coverage: 33 Square Feet per unit @ 1/8”
         3. Doesn’t require primer over porous substrates
         4. Install flooring in as little as 30 minutes
      3. Excelsior SU-310, Self-Leveling Underlayment provided by Roppe
         1. Unit Size: 50 lb. Bag
         2. 5500 PSI Compressive Strength after 28 days
         3. Install flooring within 12 hours
         4. Pumpable
      4. Excelsior Fibermat, Fiber Reinforcement Mat provided by Roppe
         1. Unit Size: 41.3” x 249’ Roll
         2. Coverage: 857 Square Feet per unit
         3. Increases flexural strength of underlayments
         4. Increases tensile strength of underlayments
         5. For wood substrates only
   3. **Adhesives:** Adhesives should be selected based on the site conditions and use of the space being installed. Recommended Adhesive Products:
      1. Excelsior SP-500, Acrylic Aerosol Pressure Sensitive Spray Adhesive provided by Roppe
         1. Unit Size: 22 Ounces
         2. Coverage: 100 Square Feet per 22 Ounce Can
         3. Should only be used if Heat Welding finished seams
         4. Standard installations over porous and non-porous substrates
         5. Excellent sheer strength
         6. Approved for Hill-Rom Beds
         7. Approved for Immediate Use
         8. Installation Limits
            1. 90% RH, ASTM F2170
            2. 8 lbs. MVER, ASTM F1869
            3. 7-10 pH
      2. Excelsior AP-520, Acrylic Roll-On Pressure Sensitive Adhesive provided by Roppe
         1. Unit Size: 2.5 Gallons
         2. Coverage: 1000 Square Feet per Unit
         3. Should only be used if Heat Welding finished seams
         4. Standard installations over porous and non-porous substrates
         5. Excellent sheer strength
         6. Approved for Hill-Rom Beds
         7. Approved for Immediate Use
         8. Installation Limits
            1. 80% RH, ASTM F2170
            2. 8 lbs. MVER, ASTM F1869
            3. 6-9 pH
      3. Excelsior AW-510, Acrylic Wet-Set Adhesive provided by Roppe
         1. Unit Size: 1 Gallon & 4 Gallon
         2. Coverage: 150 Square Feet
         3. Standard installations over porous and non-porous substrates
         4. Hard set adhesive adding to dimensionally stable materials
         5. Excellent sheer strength
         6. Approved for Hill-Rom Beds
         7. Installation Limits
            1. 90% RH, ASTM F2170
            2. 6 lbs. MVER, ASTM F1869
            3. 7-10 pH
      4. Excelsior MS-700, Modified Silane Wet-Set Adhesive provided by Roppe
         1. Unit Size: 3 Gallon
         2. Coverage: 480-705 Square Feet per unit
         3. Standard installations over porous and non-porous substrates
         4. Excellent green grab
         5. Hard set adhesive adding to dimensionally stable materials
         6. Excellent sheer strength
         7. Approved for Hill-Rom Beds
         8. Superior bond strength
         9. Great for environments with topical moisture
         10. Great for exterior applications
         11. Installation Limits, Indoor Installations only
             1. 95% RH, ASTM F2170
             2. 10 lbs. MVER, ASTM F1869
      5. Excelsior EW-710, Epoxy Wet-Set Adhesive provided by Roppe
         1. Unit Size: 1 Gallon
         2. Coverage: 150 Square Feet per unit
         3. Standard installations over porous and non-porous substrates
         4. Excellent green grab
         5. Hard set adhesive adding to dimensionally stable materials
         6. Excellent sheer strength
         7. Approved for Hill-Rom Beds
         8. Superior bond strength
         9. Great for environments with topical moisture
         10. Great for exterior applications
         11. Installation Limits, Indoor Installations only
             1. 90% RH, ASTM F2170
             2. 6 lbs. MVER, ASTM F1869
             3. 7-10 pH
   4. **Accessories:** Items needed to complete the installation. Recommended accessory products:
      1. Rubber Welding Bead provided by Roppe
         1. 0.160” (4 mm) diameter
         2. Color Matched to Color Selected for Envire
         3. Creates seamless application of flooring product
      2. FlashCove Prefabricated Base with Envire provided by Roppe
         1. Prefabricated integral coving system for environments requiring self-coved applications
         2. Color matched to the Envire Rubber Sheet being used
      3. Metal Base Chiklet Cap provided by Roppe
         1. Stainless Steel Metal cap for finishing installation
      4. Resilient Cove Cap provided by Roppe
   5. **Maintenance Materials:** Proper maintenance of the installation is critical to the long term performance of the flooring products being specified. Using the appropriate chemicals to maintain the product according to the environment in which it is specified is critical. Recommend maintenance products:
      1. Excelsior NC-900, All-Purpose Neutral pH Cleaner provided by Roppe
         1. For initial maintenance
         2. For daily and routine maintenance
      2. Excelsior CM-910, Cleaner/Maintainer provided by Roppe
         1. For daily or long-term maintenance
         2. Creates protective film that protects flooring and eases maintenance

**PART 3 – EXECUTION**

1. GENERAL
   1. **General Contractor Responsibilities:**
      1. Supply a safe, climate controlled building and subfloor as detailed in Roppe Technical Data Sheets.
      2. Ensure substrate meets the requirements of ASTM F710, Roppe Technical Data Sheets and Excelsior Technical Data Sheets.
      3. Provide a secure storage area that is maintained permanently or temporarily at normal operating temperature and humidity conditions between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring, so the flooring contractor can acclimate the flooring materials per manufacturer’s instructions.
      4. Provide an installation area that is weather tight and maintained either permanently or temporarily at ambient service temperature and humidity. Normal operating temperature and humidity conditions are between 65° F and 85° F and between 40% and 65% relative humidity, for at least 48-hours prior to and during the application of the flooring per the manufacturer’s instructions.
      5. Ensure areas with direct prolonged exposure to sunlight are protected with protective UVA/UVB restrictive coatings or films.
      6. Areas of the flooring that are subject to direct sunlight through doors or windows should have them covered using blinds, curtains, cardboard or similar for the time of the installation and 72-hours after the installation to allow the adhesive to cure. Note: These areas should be installed using wet adhesives only.
      7. Conduct initial maintenance prior to final usage per the Roppe Care & Maintenance Documents. Do not conduct initial maintenance until adhesive has cured per the adhesive technical data.
   2. **Flooring Contractor Responsibilities**:
      1. Provide trained installers that are professional, licensed, insured and acceptable to manufacturer of resilient flooring materials.
      2. Ensure installers or installation teams meet one of the following requirements:
      3. Have completed INSTALL (International Standards & Training Alliance) or CFI (Certified Floorcovering Installers) training programs and/or are certified by INSTALL or CFI.
      4. Are being supervised by Project Managers or Field Supervisors that are INSTALL (International Standards & Training Alliance) certified, CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager).
      5. Follow all requirements in the appropriate Roppe and/or Excelsior Technical Data Sheets, Care & Maintenance Documents, Warranties and other technical documents or instructions.
2. EXAMINATION
   1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and Preparation, as well as Section 01 43 00 – Quality Assurance.
   2. **Verification of Conditions:** Inspect all substrates to ensure they are clean, smooth, permanently dry, flat, and structurally sound. Confirm all areas are properly sealed and acclimated per manufacturer’s requirements.
   3. **Verification of Products:** In accordance with manufacturer’s installation requirements, visually inspect material for size, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.
3. SUBSTRATE PREPARATION
   1. **General**: Follow guidelines laid out in Division 01, Section 01 71 00 – Examination and preparation. All work required ensuring substrate or subfloor meets manufacturers’ guidelines are the responsibility of the general contractor.
   2. **Preparation**: Ensure substrate meets the requirements of ASTM F710 for concrete substrates and ASTM F1482 for wood substrates and/or Roppe Technical Data Sheets and Excelsior Technical Data Sheets.
      1. Substrates must be free of visible water or moisture, dust, sealers, paint, sweeping compounds, curing compounds, residual adhesives and adhesive removers, concrete hardeners or densifiers, solvents, wax, oil, grease, asphalt, visible alkaline salts or excessive efflorescence, mold, mildew and any other extraneous coating, film, material or foreign matter.
      2. It is recommended that all substrates have a floor flatness of FF32 and/or flatness tolerance of 1/8” in 6’ or 3/16” in 10’.
      3. Acclimate all products to be used during the installation and the installation environment prior to installation according to the manufacturers written instructions
   3. **Concrete Substrates:**
      1. **Moisture Testing:** Perform moisture testing per the manufacturer’s recommendations to determine conditions, it is recommended to treat new and existing slabs a little bit different to ensure adequate conditions exist for installation.
         1. New Slabs on all grade levels: it is recommended to perform ASTM F2170 Relative Humidity testing no more than a week prior to installation too determine the levels present and when to proceed with the installation.
         2. Existing Slabs on all grade levels: in addition to ASTM F2170 testing, existing slabs that have previously had floor covering installed, must be tested to ASTM F1869 Calcium Chloride test kits to determine the MVER of the concrete.
      2. Mechanically remove contamination on the substrate that may cause damage to the flooring material, this includes paint, permanent and non-permanent markers, pens, crayons, etc. Leaving these on the substrate or marking with them on the back of the material could cause bleed through and damage the flooring.
      3. Fill cracks, holes, depressions and irregularities in the substrate to prevent transferring through to the surface of the resilient flooring. Use a high-quality Portland cement based product such as Excelsior installation products provided by Roppe.
      4. Do not install material over expansion joints.
   4. **Wood Substrates:** wood substrates must have a minimum 18” (45.7 cm) of cross ventilated space beneath the joist.
      1. Wood substrates must be a minimum 1” thick with a double layer construction.
      2. Wood substrates must be rigid and free of movement
      3. Wood substrates must not be OSB (Oriented Strand Board), particle board, chipboard, lauan or composite type underlayments
      4. Wood substrates that are Single Wood or Tongue & Groove subfloors must be covered with the appropriate APA approved underlayment plywood:
         1. Boards with a face width of 3” (7.62 cm) or less and is tongue-and-groove and with a smooth surface, use minimum 1/4” (6.4 mm) underlayment panels
         2. Boards with a face width greater than 3” (7.62 cm) or not tongue-and-groove, or with a rough surface, use minimum 1/2” (12.7 mm) underlayment panels
4. INSTALLATION
   1. **General**: Follow all relevant guidelines detailed in Division 01, as well as flooring and adhesive manufacturer’s technical data sheets.
   2. **Resilient Rubber Sheet:** Install material in accordance with manufacturer’s recommendations
      1. Select the appropriate adhesive for the application and job site conditions
      2. Install material according to roll sequence or with like run numbers
      3. Install material according to directional arrow on the back of the material and do not reverse sheets
      4. Ensure material is rolled appropriately into the adhesive using a 100 lb. three section roller
      5. Heat Weld seams if required by the area in which the material is being installed.
         1. **Heat Welding (Seamless Floors)**: Material shall be grooved to accept Roppe rubber weld bead. Roppe rubber 4mm (0.160”) weld bead shall be installed according to manufacturer’s recommended installation documents.
         2. Do not heat weld for 24 hours to allow adhesive to fully cure.
      6. Roppe Envire Rubber Sheet & Tile may be flash coved if the installation requires it. Roppe recommends using FlashCove Prefabricated Bases with Envire for this purpose.
         1. Use appropriate Roppe Fillet Strip for flash coving on site
         2. Net fit flooring into the appropriate Roppe Cove Cap for flash coving on site
   3. **FlashCove Prefabricated Base:** Install in accordance with manufacturer’s installation recommendations.
      1. Dry fit FlashCove to the required lengths
      2. Miter cut inside and outside corners to fit the angles of the constructed corner
      3. Dry fit and cut cove cap being used prior to installation
      4. Scribe glue line on wall and floor at edge of FlashCove material
      5. Apply adhesive in full spread for complete coverage of the FlashCove material
      6. Apply FlashCove to the prepared surface as level and straight as possible
      7. Slide cove cap behind FlashCove material
      8. Hand roll FlashCove material onto wall and floor surface and remove excess adhesive
      9. After installation of flooring, finish all seams of FlashCove according to floor covering manufacturers recommendations
   4. **Interface with Other Work:** If caulking or sealing is required after installation, please contact the manufacturer for a suitable, color matching caulk.
5. CLEANING & MAINTENANCE
   1. **General**: Clean up installation area and sweep, dust or wipe material to remove any dirt, dust or debris.
   2. **Initial Maintenance**: Conduct initial maintenance per the manufacturer’s recommended procedures stated in the Maintenance Documents. All documentation is available upon request or from the Roppe website. Excelsior Cleaning products are the recommended products for use. All can be found linked to the product on the Roppe website or at [www.excelsiorproducts.net](http://www.excelsiorproducts.net).
   3. **Regular Maintenance**: Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the flooring and alter the dissipative properties of the tiles. The amount of maintenance depends directly upon the amount of dirt and particulates the floor is subjected to.
6. CLOSEOUT ACTIVITIES
   1. **General**: Follow all federal, state and local requirements and Division 01 Section 01 76 00 – Protecting Installed Construction and Section 01 78 00 – Closeout Submittal requirements for these activities.
   2. **Protection**: Protect newly installed material with construction grade paper or protective boards, such as Masonite or Ram Board, to protect material from damage by other trades. Be sure all construction debris is swept up and removed prior to the protective material being installed and does not get trapped underneath. Limit usage and foot traffic according to the adhesive's requirements. When moving appliances or heavy furniture, protect wall base from scuffing and tearing using temporary floor protection as well.

END OF SECTION 09 65 16