SECTION 07 54 19

PVC MEMBRANE ROOFING

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\*\* NOTE TO SPECIFIER \*\* Versico Roofing Systems; Thermoplastic Polyvinyl Chloride (PVC) Membrane Roofing.  
This section is based on the products of Versico Roofing Systems, which is located at:  
P.O. Box 1289.  
Carlisle, PA 17013  
Toll Free Tel: (800) 992-7663  
Fax: (717) 960-4036  
Email: <Emma.Nealy@Versico.com>   
Web:[www.versico.com](http://www.versico.com)   
Versico Roofing Systems is one of the largest providers of single-ply roofing systems in the world! With an eighteen-year track record of success, Versico has established their position in the industry, offering a single-source approach to their customers which results in more accuracy and convenience. Versico offers single-ply systems to meet the needs of almost any type of building structure. These systems include VersiGard EPDM, VersiFlex PVC, and our state-of-the-art line of VersiWeld TPO heat-weldable roofing systems, as well as a full line of accessory products and warranties.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Thermoplastic Polyvinyl Chloride (PVC) Membrane Roofing:
       1. Membrane base sheets.
       2. Roof insulation.
       3. Roof insulation adhesives.
       4. PVC roofing membranes.
       5. Flashing accessories.
       6. Cleaners, primers, adhesives and sealants.
       7. Bitumen.
       8. Fasteners.
       9. Edgings and terminations.
       10. Roof garden.
       11. Walkways.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete.
    2. Section 03 51 13 - Cementitious Wood Fiber Decks.
    3. Section 03 52 13 - Composite Concrete Roof Insulation.
    4. Section 05 36 00 - Composite Metal Decking.
    5. Section 06 10 00 - Rough Carpentry.
    6. Section 07 62 00 - Sheet Metal Flashing and Trim.
    7. Section 07 70 00 - Roof and Wall Specialties and Accessories.
    8. Section 08 60 00 - Roof Windows and Skylights.
    9. Section 22 30 00 - Plumbing Equipment.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. American Society of Civil Engineers (ASCE) - ASCE 7 - Minimum Design Loads for Buildings and Other Structures, Current Revision.
    2. ASTM International (ASTM):
       1. ASTM C208 - Standard Specification for Cellulosic Fiber Insulating Board.
       2. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation.
       3. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board.
       4. ASTM D41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.
       5. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
       6. ASTM D312 - Standard Specification for Asphalt Used in Roofing.
       7. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension.
       8. ASTM D1079 - Standard Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.
       9. ASTM D2178 - Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.
       10. ASTM D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
       11. ASTM D4434 - Standard Specification for Poly (Vinyl Chloride) Sheet Roofing.
       12. ASTM D4491 - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
       13. ASTM D4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing.
       14. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
    3. Factory Mutual (FM Global):
       1. Approval Guide.
          1. Factory Mutual Standard 4470 - Approval Standard for Class 1 Roof Covers.
          2. Loss Prevention Data Sheets 1-28, 1-29.
    4. International Code Council (ICC):
       1. International Building Code (IBC).
    5. National Roofing Contractors Association (NRCA) - Low Slope Roofing and Waterproofing Manual, Current Edition.
    6. Sheet Metal and Air Conditioning Contractors National Association, 1nc. (SMACNA) - Architectural Sheet Metal Manual.
    7. Underwriters Laboratories (UL):
       1. TGFU R1306 - "Roofing Systems and Materials Guide."
       2. UL-790 - Standard Test Method for Fire Tests of Roof Coverings.

\*\* NOTE TO SPECIFIER \*\* Retain only design criteria required for the project and delete those not required or not applicable.

* 1. DESIGN CRITERIA
     1. Wind Uplift Performance:

\*\* NOTE TO SPECIFIER \*\* Select required wind uplift performance criteria. Performance may be specified by referencing ASCE-7, by reference of an FM tested assembly, or by utilizing a DORA Assembly number.

* + - 1. Roof system is designed to withstand wind uplift forces as calculated using the current revision of ASCE-7.

\*\* NOTE TO SPECIFIER \*\* Insert the appropriate FM rating as found in the current FM Guide.

* + - 1. Roof system is designed to achieve a FM 1-\_\_\_ wind uplift rating.

\*\* NOTE TO SPECIFIER \*\* Insert the appropriate DORA Assembly number as found in the current Directory of Roof Assemblies (DORA) by SPRI.

* + - 1. Roof system is designed to achieve a DORA Assembly number \_\_\_ .
    1. Fire Resistance Performance:

\*\* NOTE TO SPECIFIER \*\* Select fire rating. Delete two of the next three paragraphs.

* + - 1. Roof System UL Class A rating: Tested in accordance with UL-790.
      2. Roof System UL Class B rating: Tested in accordance with UL-790.
      3. Roof System UL Class C rating: Tested in accordance with UL-790.

\*\* NOTE TO SPECIFIER \*\* Insert LTTR Value. Modify R value' to LTTR value' where Polyisocyanurate insulation is not used in the system.

* + 1. Thermal Performance: Roof system will achieve a minimum R value of \_\_\_\_.
    2. Drainage: Positive drainage where all standing water dissipates within 48 hours after precipitation ends.
    3. Building Codes:
       1. Meet requirements of federal, state and local code bodies having jurisdiction.

\*\* NOTE TO SPECIFIER \*\* Delete next paragraph if LEED Credit is not required.

* 1. LEED CERTIFICATION:
     1. Coordinate with Section 01 11 13 - Work Covered by Contract Documents.
     2. Submittals Required:
        1. SSc7.2 Heat Island Effect - Roof (LEED Form).
        2. MRc4 Recycled Content (LEED Form).
        3. MRc5 Local and Regional Materials (LEED Form).
        4. EQc4.1 Low-Emitting Materials - Adhesives and Sealants (LEED Form)
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations.
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
     3. Detail Drawings:
        1. Submit approved plan, section, elevation or isometric drawings which detail the appropriate methods for all flashing conditions found on the project.
        2. Coordinate approved drawings with locations found on the Contract Drawings.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of chips representing manufacturer's full range of available colors, membranes, and thicknesses.
    2. Verification Samples: For each finish product specified, two samples, minimum size 4 inches (100 mm) square representing actual product, color, and patterns.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: All primary products specified in this section will be supplied by a single manufacturer with a minimum of fifteen years' experience.
     2. Installer Qualifications:
        1. All products listed in this section are to be installed by a single installer with a minimum of five years demonstrated experience in installing products of the same type and scope as specified.

\*\* NOTE TO SPECIFIER \*\* Retain one of the next two paragraphs if manufacturer supplied guaranties are specified. Delete paragraphs if not required.

* + - 1. Installer shall be capable of extending the Manufacturer's Labor and Materials guarantee.
      2. Installer shall be capable of extending the Manufacturer's No Dollar Limit guarantee.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Mock-Up: Provide a mock-up for evaluation of surface preparation, installation techniques and workmanship.
       1. Finish areas designated by Architect.
       2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
       3. Refinish mock-up area as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Store products in manufacturer's unopened packaging until ready for installation.
     2. Store and dispose of hazardous materials, and materials contaminated by hazardous materials, in accordance with requirements of local authorities having jurisdiction.
  2. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
  3. WARRANTY

\*\* NOTE TO SPECIFIER \*\* Modify the included text as required.

* + 1. At project closeout, provide to Owner or Owners Representative an executed copy of the manufacturer's Total System warranty, outlining its terms, conditions, and exclusions from coverage.

\*\* NOTE TO SPECIFIER \*\* Select Warranty Duration based on specified roof assembly. Delete duration options not required.

\*\* NOTE TO SPECIFIER \*\* 5-year warranty is available for:

Fully Adhered 50-, 60- and 80-mil PVC.

Mechanically Attached 50-, 60- and 80-mil PVC.

Fully Adhered 105, 115 and 135 mil PVC VersiFleece.

Mechanically Attached 105, 115 and 135 mil PVC VersiFleece.

* + - 1. Duration: 5 Years.

\*\* NOTE TO SPECIFIER \*\* 10-year warranty is available for:

Fully Adhered 50-, 60- and 80-mil PVC.

Mechanically Attached 50-, 60- and 80-mil PVC.

Fully Adhered 105, 115, and 135 mil PVC VersiFleece.

Mechanically Attached 105, 115 and 135 mil PVC VersiFleece.

* + - 1. Duration: 10 Years.

\*\* NOTE TO SPECIFIER \*\* 15-year warranty is only available for:

Fully Adhered 50-, 60- and 80-mil PVC.

Mechanically Attached 50-, 60- and 80-mil PVC.

Fully Adhered 105, 115 and 135 mil PVC VersiFleece.

Mechanically Attached 105, 115 and 135 mil PVC VersiFleece.

* + - 1. Duration: 15 Years.

\*\* NOTE TO SPECIFIER \*\* 20-year warranty is only available for:

Fully Adhered 60- and 80-mil PVC.

Mechanically Attached 60- and 80-mil PVC.

Fully Adhered 115- and 135-mil PVC VersiFleece.

* + - 1. Duration: 20 Years.

\*\* NOTE TO SPECIFIER \*\* 25-year warranty is only available for:

Fully Adhered 80-mil PVC.

Mechanically Attached 80-mil PVC.

Fully Adhered 135-mil PVC VersiFleece.

* + - 1. Duration: 25 Years.

\*\* NOTE TO SPECIFIER \*\* 30-year warranty is only available for:

Fully Adhered 80-mil PVC.

Mechanically Attached 80-mil PVC.

Fully Adhered 135-mil PVC VersiFleece.

* + - 1. Duration: 30 Years.

\*\* NOTE TO SPECIFIER \*\* Delete if not required. Puncture coverage is only available for:

Fully Adhered 80 mil PVC.

Mechanically Attached 80 mil PVC.

Fully Adhered 115 and 135 mil PVC VersiFleece.

* + - 1. Puncture Coverage Rider: Coverage to be extended to include accidental punctures in accordance with terms stated in the Warranty document.

\*\* NOTE TO SPECIFIER \*\* Select hail coverage where specified. Delete one of the next two paragraphs or both if Hail coverage is not required.

\*\* NOTE TO SPECIFIER \*\* 1 inch Hail coverage is only available for:

Fully Adhered 60 and 80 mil PVC, requires Dens-Deck, Securock, SecurShield HD, SecurShield HD Plus, SecurShield HD Composite or DuraFacer Composite.

Fully Adhered 115 and 135 mil PVC VersiFleece.

* + - 1. Hail Coverage Rider: Coverage to be extended to include damage caused by a maximum 1 inch (25 mm) diameter hail in accordance with terms stated in the Warranty document.

\*\* NOTE TO SPECIFIER \*\* 2 inch Hail coverage is only available for:

Fully Adhered 80 mil PVC, requires Dens-Deck, Securock, SecurShield HD, SecurShield HD Plus, SecurShield HD Composite or DuraFacer Composite.

Fully Adhered 135 mil PVC VersiFleece.

* + - 1. Hail Coverage Rider: Coverage to be extended to include damage caused by a maximum 2 inch (51 mm) diameter hail in accordance with terms stated in the Warranty document.

\*\* NOTE TO SPECIFIER \*\* Delete Roof Edge Rider if not required.

* + - 1. Roof Edge Rider: Coverage to be extended to include roof edge metal water tightness in accordance with terms stated in the Warranty document.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Versico Roofing Systems, which is located at: P. O. Box 1289; Carlisle, PA 17013; ASD Toll Free Tel: 800-992-7663; Fax: 717-960-4036; Email: <Emma.Nealy@Versico.com>; Web: <http://www.versico.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00.
  1. SCOPE / APPLICATION
     1. Roof System: Provide a waterproof roof system, capable of withstanding uplift forces as specified in this section.

\*\* NOTE TO SPECIFIER \*\* Delete membrane attachment option not required.

* + - 1. Membrane Attachment: Mechanically Attached.
      2. Membrane Attachment: Fully Adhered.
    1. Base Flashing: Provide a waterproof, fully adhered base flashing system at all penetrations, plane transitions and terminations.

\*\* NOTE TO SPECIFIER \*\* Delete the next paragraph if insulation beneath the membrane is not specified.

* + 1. Insulation: Provide a roof insulation system beneath the finish membrane.

\*\*NOTE TO SPECIFIER\*\* Delete planting system paragraphs not required or delete the roof garden assembly paragraph if a roof garden is not required.

* + 1. Roof Garden Assembly:
       1. Intensive Planting System:
          1. Soil Depth: Geater than 8 inches (204 mm).
          2. Vegetation: Plants such as sod grass, annual or perennial flowers, shrubs and small trees.
          3. Structural Capacity: Must withstand the additional dead loads as calculated by Project Engineer. Typically can exceed 48 lbs per sq ft.
       2. Extensive Planting System:
          1. Soil Depth: of 4 to 8 inches (102 to 204 mm).
          2. Vegetation: Plants include sedums, herbs, grasses and other vegetation which can grow in this depth of media.
          3. Structural Capacity: Must withstand the additional dead loads as calculated by Project Engineer. Typically 24 to 48 lbs per sq ft.
       3. Ultra-Extensive Planting System:
          1. Soil Depth: Less than 4 inches (102 mm).
          2. Vegetation: Plants include sedums, herbs and grasses. Suited for areas that receive little maintenance.
          3. Structural Capacity: Must withstanding the additional dead loads as calculated by Project Engineer. Typically less than 24 lbs per sq ft.

\*\* NOTE TO SPECIFIER \*\* As an alternate to Ultra-Extensive or Extensive traditional, Versico Hydropack System may be used.

* + - 1. Planting System: Versico Hydropack System.

\*\* NOTE TO SPECIFIER \*\* Select base sheets required on the project and delete others.

* 1. MEMBRANE BASE SHEET

\*\* NOTE TO SPECIFIER \*\* Versico FR Base Sheet is used only on mechanically attached roofing systems.

* + 1. Versico FR Base Sheet 1S: A non-asphaltic, resin-bound, fiberglass-reinforced mat, coated on one side with a mineral-filled fire-resistant coating. 42 inches (1067 mm) wide and 200 ft (60,960 mm) long. Designed for use as a suitable substrate for direct application of Mechanically Attached Roofing Systems over decks requiring a fastened base sheet.
    2. Versico SureMB 70 SA Modified Base Sheet: 70-mil smooth surface, self-adhered base ply. Reinforced with a fiberglass mat that is saturated and coated with asphaltic bitumen and SBS elastomer and meets ASTM D6163 Type 1, Grade S. 70 SA is designed to be used as a base ply or interplay in Versico's multiple-ply system and can be used as an air and vapor barrier or temporary (up to 60 days) roof. Available in 39-3/8" wide and 61' long (200 square feet) weighing 0.39 lbs per square foot.
    3. Versico Modified Base Sheet: A tough, glass fiber, reinforced, SBS-modified asphalt, base sheet that meets or exceeds the requirements for ASTM D 6163 Type I, Grade S for SBS-modified bituminous sheet materials using glass fiber reinforcement. Nominal 39 inch (991 mm) wide by 50 feet (15,240 mm) long. Designed for use with the Hot Mopped VersiFleece Roofing System.
    4. Versico SureMB 90 Modified Base Sheet: A smooth-surfaced, torch-grade SBS base ply, reinforced with a non-woven polyester mat that is saturated and coated with asphaltic bitumen and SBS elastomers.
    5. Versico SureMB 90TG Base Sheet: 94 mil smooth-surfaced, SBS, torch-applied membrane. Reinforced with a fiberglass mat that is saturated and coated with asphaltic bitumen and SBS elastomers which meets ASTM D6163 Type I, Grade S. SureMB 90TG is designed for use as a base-ply or inter-ply in Versico's multiple-ply system and can be used as an air barrier, vapor barrier or temporary roof, up to 60 days. Available in rolls 39-3/8 inch wide and 49 ft-1 inch long (164 square feet) and weighing 0.57 lbs per square foot.
    6. Versico SureMB 120TG Base Sheet: A smooth-surfaced, torch-grade SBS base ply, reinforced with a non-woven polyester mat that is saturated and coated with asphaltic bitumen and SBS elastomers.
    7. VapAir Seal 725TR Air/Vapor Barrier: A 40-mil composite consisting of 35 mils of self-adhering rubberized asphalt laminated to a 5-mil woven polypropylene film.
    8. VapAir Seal MD Air/Vapor Barrier: reinforced composite aluminum foil with self-adhesive SBS backing and removable poly release film. Used for direct application over metal decks.

\*\* NOTE TO SPECIFIER \*\* Delete the next article if insulation is not required. Retain only insulation types required and delete all others.

* 1. INSULATION

\*\* NOTE TO SPECIFIER \*\* Available in 4 feet x 8 feet standard size with a thickness from 1 to 4 inches. 4 feet x 4 feet tapered panels are also available. Delete if not required.

* + 1. Versicore MPH, Polyisocyanurate: Rigid board with glass fiber reinforced (GRF) facers on both sides, meeting or exceeding the requirements of ASTM C 1289, Type II, Class 1.

\*\* NOTE TO SPECIFIER \*\* Delete grade not required.

* + - 1. Compressive Strength: Grade 2, 20 psi (138 kPa).
      2. Compressive Strength: Grade 3, 25 psi (173 kPa).
    1. SecurShield Polyiso: Rigid board with coated glass fiber (CGF) mat facers on both sides, meeting or exceeding the requirements of ASTM C 1289, Type II, Class 2.

\*\* NOTE TO SPECIFIER \*\* Delete grade not required.

* + - 1. Compressive Strength: Grade 2, 20 psi (138 kPa).
      2. Compressive Strength: Grade 3, 25 psi (173 kPa).
    1. Versico SecurShield HD Composite: Composite insulation panel comprised of 1/2 inch (13 mm) high-density Polyiso cover board laminated during the manufacturing process to SecurShield rigid Polyiso roof insulation meeting ASTM C1289.
       1. Top Layer: ASTM C1289 Type II, Class 4, Grade 1.
          1. Compressive Strength: 80 psi (551 kPa) minimum.
       2. Board Thickness: 1/2 inch (13 mm).
       3. Bottom Layer: ASTM C1289 Type II, Class 2, Grade 2.
          1. Compressive Strength: 20 psi (138 kPa).
    2. Versico MPH-WF Composite Board: Polyisocyanurate foam insulation with 1/2 inch (13 mm) wood fiber roof insulation laminated to one side and fiber reinforced facers laminated to one side, meeting or exceeding the requirements of ASTM C 1289.
       1. Compressive Strength (Polyiso): 20 psi (138 kPa).
       2. Compressive Strength (Wood Fiber): 35 psi (241.5 kPa).
       3. Density (Polyiso): 2 lb per cubic foot (24 kg per cu m) minimum.
    3. Versico Durafacer Composite Board: Polyisocyanurate foam insulation with 7/16 inch (11 mm) Oriented Strand Board (OSB) laminated to one side and fiber reinforced facers laminated to one side, meeting or exceeding the requirements of ASTM C 1289.
       1. Oriented Strand Board: 7/16 inch (11 mm).
       2. Compressive Strength (Wood Fiber): 35 psi (241.5 kPa).
       3. Density (Polyiso): 2 lb per cubic foot (24 kg per cu m) minimum.
    4. Insulfoam Expanded Polystyrene (EPS): Rigid, closed cell foam insulation meeting ASTM C 578.

\*\* NOTE TO SPECIFIER \*\* Select density based on insulation type. Delete two of the next three paragraphs.

* + - 1. Density: 1 lb (0.45 kg) min.
      2. Density: 1.25 lb (0.57 kg) min.
      3. Density: 1.5 lb (0.68 kg) min.
    1. Foamular Extruded Polystyrene (XPS): Rigid, closed-cell structured thermal barrier meeting ASTM C 578.

\*\* NOTE TO SPECIFIER \*\* Select insulation type. Delete three of the next four paragraphs.

* + - 1. Foamular 250: Compressive Strength - 25 psi (1.75 kg per sq.cm.) minimum.
      2. Foamular 400: Compressive Strength - 40 psi (2.8 kg per sq.cm.) minimum.
      3. Foamular 600: Compressive Strength - 60 psi (4.2 kg per sq.cm.) minimum.
      4. Foamular 1000: Compressive Strength - 100 psi (7.03 kg per sq.cm.) minimum.
    1. Foamular Durapink Extruded Polystyrene (XPS): Rigid, closed-cell recovery board meeting ASTM C 578.

\*\* NOTE TO SPECIFIER \*\* Select thickness. Delete two of the next three paragraphs.

* + - 1. Board Thickness: 1 inch (25 mm). Compressive Strength: 25 psi (1.75 kg per sq.cm.) minimum.
      2. Board Thickness: 3/4 inch (19 mm). Compressive Strength: 25 psi (1.75 kg per sq.cm.) minimum.
      3. Board Thickness: 1/2 inch (13 mm). Compressive Strength: 18 psi (1.27 kg per sq.cm.) minimum.
    1. Dow Styrofoam Extruded Polystyrene (XPS): Rigid, closed-cell structured thermal barrier meeting ASTM C 578.

\*\* NOTE TO SPECIFIER \*\* Select insulation type based on project requirements. Delete three of the next four paragraphs.

* + - 1. Deckmate: Compressive Strength - 18 psi (1.27 kg per sq.cm.) minimum.
      2. Deckmate Plus: Compressive Strength - 25 psi (1.75 kg per sq.cm.) minimum.
      3. Roofmate: Compressive Strength - 40 psi (2.8 kg per sq. cm.) minimum.
      4. Plazamate: Compressive Strength - 60 psi (4.2 kg per sq. cm.) minimum.
    1. GP Gypsum Dens-Deck Prime: Water-resistant and silicone treated gypsum panel with embedded fiberglass facer on both sides, and pre-primed on one side.

\*\* NOTE TO SPECIFIER \*\* Select thickness. Delete three of the next four paragraphs.

* + - 1. Board Thickness: 1/4 inch (6 mm).
      2. Board Thickness: 3/8 inch (10 mm).
      3. Board Thickness: 1/2 inch (13 mm).
      4. Board Thickness: 5/8 inch (15 mm).
    1. GP Gypsum Dens-Deck: Water-resistant and silicone treated gypsum panel with embedded fiberglass facer on both sides.

\*\* NOTE TO SPECIFIER \*\* Select thickness. Delete three of the next four paragraphs.

* + - 1. Board Thickness: 1/4 inch (6 mm).
      2. Board Thickness: 3/8 inch (10 mm).
      3. Board Thickness: 1/2 inch (13 mm).
      4. Board Thickness: 5/8 inch (15 mm).
    1. Securock: Moisture-, mold- and impact-resistant, nonstructural fiber-reinforced gypsum panel made from 95 percent recycled materials.

\*\* NOTE TO SPECIFIER \*\* Select thickness. Delete three of the next four paragraphs.

* + - 1. Board Thickness: 1/4 inch (6 mm).
      2. Board Thickness: 3/8 inch (10 mm).
      3. Board Thickness: 1/2 inch (13 mm).
      4. Board Thickness: 5/8 inch (15 mm).
    1. SecurShield HD Polyiso Cover board: Rigid board with coated glass fiber (CGF) mat facers on both sides, meeting or exceeding the requirements of ASTM C 1289, Type II, Class 4, Grade 1.
       1. Compressive Strength: 80 psi min. (551 kPa).
       2. Board Thickness: 1/2 inch (13 mm).
    2. SecurShield HD Plus Polyiso Cover Board: Rigid board with coated glass fiber (CGF) mat facers on both sides, meeting or exceeding the requirements of ASTM C 1289, Type II, Class 4, Grade 1. Designed for higher uplift with fewer fasteners per board.
       1. Compressive Strength: 80 psi min. (551 kPa).
       2. Board Thickness: 1/2 inch (13 mm).

\*\* NOTE TO SPECIFIER \*\* Delete the entire next article if insulation adhesive is not required.

* 1. INSULATION ADHESIVE
     1. Flexible DASH Adhesive: A spray or extruded applied, two-component polyurethane, low-rise expanding foam adhesive used for attaching approved insulations to compatible substrates including concrete, cellular lightweight insulating concrete, gypsum, cementitious wood fiber, wood or steel, or existing smooth or gravel surfaced BUR, modified bitumen or cap sheets.
     2. Versico Flexible DASH DC, Dual Cartridge, Dual Tank or 5-gallon (19 L) jug Adhesive: A two-component, polyurethane construction grade, low-rising expanding adhesive designed for bonding insulation to various substrates using a portable applicator.
     3. OlyBond 500 BA: A two-component, polyurethane, low-rise expanding adhesive used to bond insulation to various substrates using a mechanical dispenser system.
     4. OlyBond Spot Shot: A two-component, polyurethane construction grade, low-rising expanding adhesive designed for bonding insulation to various substrates using a portable applicator.
     5. One-Step: A two-component, polyurethane construction grade, low-rising expanding adhesive designed for bonding insulation to various substrates using a portable applicator.
  2. POLYVINYL CHLORIDE (PVC) MEMBRANE

\*\* NOTE TO SPECIFIER \*\* Select membrane type(s) required on the project from the next seven options, and delete all others not required. Modify the included text as instructed.

* + 1. VersiFlex Membrane:
       1. Membrane consists of polyester fabric that is encapsulated between the monolithically formed PVC based top and bottom plies. The combination of the fabric and PVC plies provide VersiFlex Reinforced PVC membranes with high breaking strength, tearing strength, and puncture resistance.

\*\* NOTE TO SPECIFIER \*\* Select Membrane Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Light Gray.
      4. Color: Slate Gray.
      5. Color: Tan.

\*\* NOTE TO SPECIFIER \*\* Select membrane thickness. Delete two of the next three paragraphs.

* + - 1. Membrane Thickness: 50 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.0160 inches (0.406mm).
         2. Breaking Strength (ASTM D 751): 200 lbf per in (35 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 45 lbf per in (200 N per m) minimum.
         4. Elongation (ASTM D 751): 15 percent.
         5. Field Sheet Width: 81 inches (2.05 m) maximum.
         6. Field Sheet Width: 10 feet (3 m) maximum.
         7. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 60 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.016 inches (0.406 mm).
         2. Breaking Strength (ASTM D 751): 200 lbf per in (35 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 45 lbf per in (200 N per m) minimum.
         4. Elongation (ASTM D 751): 15 percent.
         5. Field Sheet Width: 81 inches (2.05 m) maximum.
         6. Field Sheet Width: 10 feet (3 m) maximum.
         7. Length: 100 feet (30.5 m) maximum.
      3. Membrane Thickness: 80 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.025 inches (0.635mm).
         2. Breaking Strength (ASTM D 751): 200 lbf per in (35 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 45 lbf per in (200 N per m) minimum.
         4. Elongation (ASTM D 751): 15 percent.
         5. Field Sheet Width: 81 inches (2.05 m) maximum.
         6. Field Sheet Width: 10 feet (3 m) maximum.
         7. Length: 75 feet (22.8 m) maximum.
    1. VersiFlex FRS PVC Membrane as manufactured by Versico:
       1. Membrane consists of Fiberglas Reinforced Scrim that is encapsulated between the monolithically formed PVC based top and bottom plies. The combination of the fabric and PVC plies provide VersiFlex FRS PVC membranes with enhanced dimensional stability.

\*\* NOTE TO SPECIFIER \*\* Select Membrane Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Light Gray.
      4. Color: Slate Gray.
      5. Color: Tan.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 50 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.0160 inches (0.406 mm) minimum.
         2. Tensile Strength (ASTM D 638): 1500 psi (110.4 MPa) minimum.
         3. Tear Resistance (ASTM D 1004): 10 lbf (45 N) minimum.
         4. Elongation at Break (ASTM D 638): 250 percent minimum machine direction. 220 percent minimum cross machine direction.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 60 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.034inches (0.86 mm) minimum.
         2. Breaking Strength (ASTM D 751): 85 lbf per in(15kN per m) minimum.
         3. Tear Resistance (ASTM D 1004): 20 lbf (88 N) minimum.
         4. Elongation at Break (ASTM D 638): 310 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 80 feet (24.4 m) maximum.
      3. Membrane Thickness: 80 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.040 inches (1.02 mm) minimum.
         2. Breaking Strength (ASTM D 751): 85 lbf per in(15kN per m) minimum.
         3. Tear Resistance (ASTM D 1004): 25 lbf (111 N) minimum.
         4. Elongation at Break (ASTM D 638): 380 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 65 feet (19.8 m) maximum.
    1. VersiFlex PVC KEE HP Membrane as manufactured by Versico:
       1. Membrane consists of polyester fabric that is encapsulated between the monolithically formed PVC KEE HP based top and bottom plies. PVC membrane enhanced with KEE HP/ High Performance Elvaloy copolymer, Elvaloy KEE-Ketone Ethylene Ester, provides enhanced chemical resistance, heat resistance, UV resistance and long-term weldability.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: White.
      2. Color: Tan.
      3. Color: Gray.
      4. Color: Light Gray.
      5. Color: Slate Gray.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 50 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.024 inches (0.61 mm) minimum.
         2. Breaking Strength (ASTM D 751): 290 lbf per in (51 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 125 lbf (556 N) minimum.
         4. Elongation (ASTM D 751): 30 percent minimum.
         5. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 60 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.029 inches (0.74 mm) minimum.
         2. Breaking Strength (ASTM D 751): 320 lbf per in (56kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 120 lbf (534 N) minimum.
         4. Elongation (ASTM D 751): 30 percent.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      3. Membrane Thickness: 80 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.036 inches (0.91 mm) minimum.
         2. Breaking Strength (ASTM D 751): 330 lbf per in (58kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 150 lbf (667 N) minimum.
         4. Elongation (ASTM D 751): 30 percent.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 75 feet (22.86 m) maximum.
    1. VersiFlex APEEL PVC Membrane: PVC membrane laminated to a protective film to protect the membrane during installation from scuffs and dirt accumulation
       1. Color: White.
       2. Membrane Thickness: 60 mil nominal.
          1. Thickness over Scrim: 0.020 inches (0.508 mm).
          2. Breaking Strength (ASTM D 751): 250 lbf/in (1.1 kN/m) minimum.
          3. Tear Resistance (ASTM D 751): 55 lbf/in (245 N/m) minimum.
          4. Elongation (ASTM D 751): 25 percent.
       3. Field Sheet Dimensions:
          1. Width: 5 feet (1.5 m) maximum.
          2. Width: 10 feet (3.05 m) maximum.
          3. Length: 100 feet (30.5 m) maximum.
    2. VersiFlex APEEL PVC KEE HP Membrane: PVC membrane enhanced with KEE HP/ High Performance Elvaloy copolymer (Elvaloy KEE-Ketone Ethylene Ester) provides enhanced chemical resistance, heat resistance, UV resistance and long-term weldability. PVC KEE HP membrane laminated to a protective film to protect the membrane during installation from scuffs and dirt accumulation.
       1. Color: White.
       2. Membrane Thickness: 60 mil nominal.
          1. Thickness over Scrim: 0.020 inches (0.508 mm).
          2. Breaking Strength (ASTM D 751): 250 lbf/in (1.1 kN/m) minimum.
          3. Tear Resistance (ASTM D 751): 55 lbf/in (245 N/m) minimum.
          4. Elongation (ASTM D 751): 25 percent.
       3. Field Sheet Dimensions:
          1. Width: 5 feet (1.5 m) maximum.
          2. Width: 10 feet (3.05 m) maximum.
          3. Length: 100 feet (30.5 m) maximum.
    3. VersiFlex PVC VersiFleece Membrane as manufactured by Versico:
       1. VersiFlex VersiFleece 115 or 135 membrane incorporates 60- or 80-mil thick polyester Reinforced PVC membrane laminated to a 55-mil non-woven fleece backing resulting in a total finished sheet thickness of 115, or 135- mils.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: White.
      2. Color: Tan.
      3. Color: Gray.
      4. Color: Light Gray.
      5. Color: Slate Gray.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 115 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.027 inches (0.686 mm) minimum.
         2. Breaking Strength (ASTM D 751): 420 lbf per in (73 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 420 lbf per in (73 kN per m) minimum.
         4. Elongation at Break (ASTM D 751): 30 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 135 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.037 inches (0.940 mm) minimum.
         2. Breaking Strength (ASTM D 751): 450 lbf per in (79 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 160 lbf (711 N) minimum.
         4. Elongation at Break (ASTM D 751): 30 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 75 feet (22.86 m) maximum.
    1. VersiFlex PVC FRS VersiFleece Membrane as manufactured by Versico:
       1. VersiFlex PVC FRS VersiFleece 115 or 135 membrane incorporates 60- or 80-mil thick Fiberglass Reinforced PVC membrane laminated to a 55-mil non-woven fleece backing resulting in a total finished sheet thickness of 115, or 135- mils.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: White.
      2. Color: Tan.
      3. Color: Gray.
      4. Color: Light Gray.
      5. Color: Slate Gray.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 115 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.030 inches (0.762 mm) minimum.
         2. Breaking Strength (ASTM D 751): 450 lbf per in (79 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 60 lbf (267 N) minimum.
         4. Elongation at Break (ASTM D 638): 100 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 80 feet (24.4 m) maximum.
      2. Membrane Thickness: 135 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.040 inches (1.016 mm) minimum.
         2. Breaking Strength (ASTM D 751): 500 lbf per in (88 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 60lbf (267 N) minimum.
         4. Elongation at Break (ASTM D 638): 100 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 65 feet (19.8 m) maximum.
    1. VersiFlex KEE HP FRS VersiFleece Membrane as manufactured by Versico:
       1. VersiFlex KEE HP FRS VersiFleece 105, 115 or 135 membrane incorporates 50-, 60- or 80-mil thick Fiberglass Reinforced Elvaloy PVC membrane laminated to a 55-mil non-woven fleece backing resulting in a total finished sheet thickness of 105-, 115, or 135- mils.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: White.
      2. Color: Tan.
      3. Color: Gray.
      4. Color: Light Gray.
      5. Color: Slate Gray.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 105 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.018 inches (0.46 mm) minimum.
         2. Breaking Strength (ASTM D 751): 360 lbf per in (63 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 75 lbf (333 N) minimum.
         4. Elongation at Break (ASTM D 751): 15 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 115 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.027 inches (0.690 mm) minimum.
         2. Breaking Strength (ASTM D 751): 400 lbf per in (70 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 75 lbf (333 N) minimum.
         4. Elongation at Break (ASTM D 638): 15 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 80 feet (24.4 m) maximum.
      3. Membrane Thickness: 135 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.038 inches (0.970 mm) minimum.
         2. Breaking Strength (ASTM D 751): 450 lbf per in (79 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 90 lbf (400 N) minimum.
         4. Elongation at Break (ASTM D 638): 15 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 65 feet (19.8 m) maximum.
    1. VersiFlex KEE HP PVC VersiFleece Membrane as manufactured by Versico:
       1. VersiFlex KEE FRS VersiFleece 105, 115 or 135 membrane incorporates 50-, 60- or 80-mil thick polyester Reinforced Elvaloy PVC membrane laminated to a 55-mil non-woven fleece backing resulting in a total finished sheet thickness of 105-, 115, or 135- mils.

\*\* NOTE TO SPECIFIER \*\* Delete colors not required.

* + - 1. Color: White.
      2. Color: Tan.
      3. Color: Gray.
      4. Color: Light Gray.
      5. Color: Slate Gray.

\*\* NOTE TO SPECIFIER \*\* Delete membrane thickness not required.

* + - 1. Membrane Thickness: 105 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.0240 inches (0.610 mm) minimum.
         2. Breaking Strength (ASTM D 751): 410 lbf per in (72 kN per m) minimum.
         3. Tearing Strength(ASTM D 751): 120 lbf (534 N) minimum.
         4. Elongation at Break (ASTM D 751): 35 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      2. Membrane Thickness: 115 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.029 inches (0.740 mm) minimum.
         2. Breaking Strength (ASTM D 751): 450 lbf per in (79 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 150 lbf (534 N) minimum.
         4. Elongation at Break (ASTM D 751): 35 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 100 feet (30.5 m) maximum.
      3. Membrane Thickness: 135 mil nominal.
         1. Thickness over Scrim (ASTM D 4434): 0.036 inches (0.910 mm) minimum.
         2. Breaking Strength (ASTM D 751): 500 lbf per in (87 kN per m) minimum.
         3. Tearing Strength (ASTM D 751): 150 lbf (534 N) minimum.
         4. Elongation at Break (ASTM D 751): 35 percent minimum.
         5. Field Sheet Width: 120 inches (3048 mm) maximum.
         6. Length: 75 feet (22.86 m) maximum.
  1. FLASHING ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* Delete flashing options not required.

* + 1. VersiFlex PVC Inside Corners: Pre-molded corner flashing for inside corners. 80 mil thickness.

\*\* NOTE TO SPECIFIER \*\* Select Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Tan.
    1. VersiFlex PVC Outside Corners: Pre-molded corner flashing for outside corners. 80 mil thickness.

\*\* NOTE TO SPECIFIER \*\* Select Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Tan.

\*\* NOTE TO SPECIFIER \*\* PVC T-Joint Covers are required on all 60, and 80 mil PVC systems.

* + 1. VersiFlex PVC T-Joint Covers: 40 mil thick non-reinforced PVC flashing cut into a 4.5 inch (114mm) diameter circle used to seal step-offs at splice intersections.

\*\* NOTE TO SPECIFIER \*\* Select Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Tan.
    1. VersiFlex PVC Pipe Flashings: A pre-molded flashing and clamping ring used for pipe penetrations. Available for 3/4 to 8 inch (19 to 203 mm) diameter pipes.
    2. VersiFlex PVC Split Pipe Seals: Pre-fabricated flashing consisting of 60 mil thick reinforced VersiFlex Membrane for pipes 1 to 6 inch (25 to 152 mm) in diameter. A split and overlap tab are incorporated to allow the pipe seal to be opened and wrapped around the pipe when it is not possible to pull a standard pipe flashing over a round penetration.
    3. VersiFlex PVC Square Tubing Wraps: Fabricated flashings made of 60 mil thick reinforced VersiFlex membrane for square tubing. A split and overlap tab are incorporated into these parts to allow the seals to be opened and wrapped around a square penetration. Available for 3 inch, 4 inch and 6 inch (76, 102, and 152 mm) diameter square tubing.
    4. VersiFlex PVC Molded Sealant Pockets:
       1. Pre-fabricated, interlocking, 2-piece, injection molded, flexible pocket with a rigid polypropylene vertical wall and pre-formed deck flanges.
       2. Used in conjunction with Thermoplastic One-Part Pourable Sealer as specified in this section for waterproofing pipe clusters or other odd shaped penetrations. Forms a 7 1/2 inch by 6 inch (191 x 152 mm) oval when completed. Available in white only.
    5. PVC Overlayment Strip: Manufacturer's standard 80 mil PVC overlayment strip.
    6. VersiFlex PVC Non-Reinforced Flashing: 80 mil thick rolls 12 and 24 inches (305 and 610 mm) wide. Used for inside/outside corners and field fabricated pipe flashings when use of pre-molded accessories is not feasible.
    7. VersiFlex PVC Heat Weldable Walkway Rolls: VersiFlex Membrane offering superior tear, puncture and weather resistance and designed to protect VersiFlex membrane in those areas exposed to repetitive foot traffic or other hazards. Walkway material may be heat welded to VersiFlex membrane using an automated heat welder or hand held heat welder. Walkway Rolls are 36 inches (914 mm) wide by 60 feet (18.3 M) long and are nominal 80 mils thick. Gray color.
    8. VersiFlex PVC Crossgrip Walkway Rolls: Manufactured from PVC and may be used in lieu of standard VersiFlex PVC Walkway Rolls when a walkway is to be loose-laid and not secured to the membrane. Loose-laid Crossgrip PVC Walkway Rolls are effective for winds up to 55 mph. Rolls are 36" wide by 33' long, available in white, gray and yellow.
    9. VersiFlex PVC Non-Reinforced Flashing: 60 mil thick rolls 12 inches (305 mm) and 24 inches (610 mm) wide. Used for inside/outside corners and field fabricated pipe flashings when use of pre-molded accessories is not feasible. Available in white, gray, light gray slate gray and tan.
    10. VersiFlex PVC Rib Profile: Used to obtain the appearance of standing seam metal roofing with the performance of a PVC single-ply membrane.
        1. PVC Rib Profile (Tall x Wide): 1-1/4 x 2-1/8 inch (32 x 54 mm), including the welding flanges.
        2. Vertical Profile: 3/8 inch (9.5 mm) thick.
        3. Length: 10 ft (3048 mm).
        4. Quantity per Carton: 20.
        5. Profile has a continuous 1/8 inch (3.2 mm) diameter alignment hole, for use with fiberglass connecting pins, as well as a 1/8 inch (3.2 mm) fiberglass reinforcing cord for added strength.

\*\* NOTE TO SPECIFIER \*\* Select Color. Delete two of the next three paragraphs.

* + - 1. Color: White.
      2. Color: Gray.
      3. Color: Light Gray.
      4. Color: Slate Gray.
      5. Color: Tan.

\*\* NOTE TO SPECIFIER \*\* Retain only products required on this project and delete all others.

* 1. CLEANERS, PRIMERS, ADHESIVES AND SEALANTS
     1. VersiFlex PVC Adhesive: Solvent-based contact adhesive that allows bonding of VersiFlex membrane to various porous and non-porous substrates.
        1. Base: Synthetic Rubber.
        2. Color: Pale Yellow.
        3. Solids: 24.2 percent.
        4. VOC: 600 to 700 grams/liter.
     2. PVC Low VOC Bonding Adhesive: Solvent-based contact adhesive to various porous and non-porous substrates. This product meets the requirements of the less than 250 gpl VOC content requirements for the OTC Model Rule for Single-Ply Roofing Adhesives.
     3. CAV-GRIP PVC Aerosol Contact Adhesive: a low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: adhering PVC bareback membranes to a variety of horizontal substrates and vertical walls (cannot be used with any KEE or KEE HP bareback membranes), as well as adhering VersiFleece membranes to vertical walls. Coverage rate is approximately 400 sq. ft. per #40 cylinder and 800 sq. ft. per #85 cylinder as an adhesive for vertical walls, in a double-sided application; 750 sq. ft. per #40 cylinder and 1,500 sq. ft. per #85 cylinder as an adhesive, horizontally, for the field of the roof, in a double-sided applications.

\*\* NOTE TO SPECIFIER \*\* The HydroBond PVC Water-Based Adhesive cannot be used with any KEE or KEE HP PVC bareback membranes.

* + 1. HydroBond PVC Water-Based Adhesive: A wet lay-in, one-sided dispersion adhesive. Compatible with only Sure-Flex PVC smooth-backed and FleeceBACK membranes, this product is ideal for bonding only PVC membranes to various porous and non-porous substrates.
    2. Flexible DASH Adhesive: A two-component, Part A and B, spray applied, low-rise adhesive for bonding VersiFleece membrane to various surfaces.
    3. Flexible DASH Dual Cartridge Adhesive: A two component, Part A and B, extrusion applied, low rise adhesive for bonding VersiFleece membrane and insulation to various surfaces.
    4. Flexible DASH Dual Tank Adhesive: A two component, Part A and B, extrusion applied, low rise adhesive for bonding VersiFleece membrane and insulation to various surfaces.
    5. Flexible DASH 5-gallon Jug Adhesive: A two-component, polyurethane construction grade, low-rise expanding adhesive designed for bonding insulation to various substrates, packaged for use with spray application rigs.
    6. CAV-GRIP 3V Low-VOC Aerosol Contact Adhesive/Primer: A low-VOC, methylene chloride-free adhesive that can be used for a variety of applications including: Priming unexposed asphalt prior to applying Flexible DASH Adhesive and for adhering VersiFlex VersiFleece membrane to vertical walls. Coverage rate is approximately 2,000 to 2,500 sq. ft. (186 to 232 square meters) per 40 lb (18 kg) cylinder and 4,000 to 5,000 sq. ft. (372 to 465 square meters) per 85 lb (39 kg) cylinder as a primer, in a single-sided application; 750 sq. ft. (70 square meters) per 40 lb (18 kg) cylinder and 1,500 sq. ft. (139 square meters) per 85 lb (39 kg) cylinder as an adhesive for vertical walls, in a double-sided application; 1,000 sq. ft. (93 square meters) per 40 lb (18 kg) cylinder and 2,000 sq. ft. (186 square meters) per 85 lb (39 kg) cylinder as an adhesive, horizontally, for the field of the roof, in a double-sided application.
    7. VersiFlex PVC Cut Edge Sealant: Free flowing, clear sealant designed for sealing cut edges of VersiFlex reinforced membrane.
    8. Water Cut-Off Mastic: A one-component, low viscosity, self-wetting, Butyl blend mastic used as a compression sealing agent between membrane and applicable substrates.
    9. CCW 702 Primer and 702LV Primer (Low VOC): A single component, solvent based, high-tack primer used to provide maximum adhesion between Versico 725TR Air and Vapor Barrier and an approved substrate. Applied by spray or long nap roller with a coverage rating ranging from approximately 300 to 350 square feet (28 to 33 square meters) per gallon (3.8 L) on smooth finishes, such as concrete, to 75 square feet (70 square meters) per gallon (3.8 L) on porous surfaces (i.e., Dens-Deck Prime gypsum board). Available in 5-gallon containers. CCW 702LV Primer contains less than 250 g/L VOCs and meets South Coast Air Quality Management District (SCAQMD) and Leadership in Energy and Environmental Design (LEED) Requirements for Volatile Organic Compounds.
    10. CCW 702 WB: A high-tack, water-based contact adhesive for promoting adhesion of Versico air/vapor barrier membranes and an approved substrate, such as concrete, Dens-Deck Prime and Securock. Applied by roller, brush or spray with an application rate of approximately 200 sq. ft. (18.6 square meters) per gallon (3.8 L). Available in 5 gallon containers. CCW 702 WB Primer contains 57 g/L VOCs and meets South Coast Air Quality Management District (SCAQMD) and Leadership in Energy and Environmental Design (LEED) Requirements for Volatile Organic Compounds.
    11. Universal Single-Ply Sealant: A 100 percent solids, solvent free, one-part polyether sealant that is used as a termination bar sealant. Available in white only.
    12. White One-Part Pourable Sealant: Single component, moisture curing, elastomeric polyether sealant that is compatible with Versico's Thermoplastic membranes. Provides a flexible, durable and long lasting seal around hard-to-flash penetrations in Thermoplastic Roofing Systems.
    13. PVC and KEE HP Membrane Cleaner: Clear, solvent-based cleaner used to loosen and remove contaminants from the surface of exposed membrane.

\*\* NOTE TO SPECIFIER \*\* Retain the next article only if insulation is asphalt fully adhered.

* 1. BITUMEN
     1. Hot Asphalt: Meets or exceeds requirements of ASTM D 312:

\*\* NOTE TO SPECIFIER \*\* Select required asphalt type. Delete two of the next three paragraphs.

* + - 1. Type: Type III
      2. Type: IV
      3. Type: SEBS
    1. Cut-Back Asphalt Primer: ASTM D 41 primer for structural concrete decks, existing smooth BUR, mineral surfaced cap sheet, or modified bitumen membranes prior to mopping.
  1. FASTENERS

\*\* NOTE TO SPECIFIER \*\* Retain only fasteners required on this project and delete all others.   
The HPVX fastener is only used on mechanically attached roofing systems.

* + 1. HPVX Fastener: A heavy duty No. 15 threaded fastener with a No. 3 Phillips drive used with Versico's HPVX Fastening Plate to secure Mechanically Attached Roofing Systems. It is used on minimum 22 gauge steel decks or minimum 15/32 inch (12 mm) CDX plywood decks. It is also designed to offer an optimum combination of driving performance, back-out and corrosion resistance with excellent pullout performance.

\*\* NOTE TO SPECIFIER \*\* The HPV-XL fastener is only used on mechanically attached roofing systems.

* + 1. HPV-XL Fastener: An oversized diameter (0.315 inch) steel, threaded fastener used in conjunction with HPV-XL Plates for membrane securement into minimum 22 gauge steel or wood decks on Mechanically Attached Roofing Systems.
    2. HPV Fastener: A threaded E-coat square head fastener for insulation attachment only. Used into steel, wood plank, minimum 15/32 inch (12 mm) thick plywood or minimum 7/16 inch (11 mm) thick oriented strand board (OSB).
    3. InsulTite ASAP Fastener: Versico's InsulTite Fastener pre-assembled with a 3 inch (76 mm) diameter plastic plate used for insulation attachment only on Fully Adhered and Mechanically Attached Roofing Systems.
    4. InsulTite Fasteners: A threaded Phillips drive fastener used with Versico Insulation Plates for insulation attachment to steel or wood decks.
    5. CD-10 Fastener: A hammer-driven, non-threaded E-Coat fastener for use with structural concrete decks rated 3,000 psi (211 kg per square cm) or greater.
    6. MP 14-10 Concrete Fastener: A No. 14 threaded fastener with a No. 3 Phillips drive used for minimum 3,000 psi (211 kg per square cm) concrete decks.
    7. Gyptec Fastener: A glass-filled nylon auger fastener designed for use with cementitious wood fiber and gypsum decks.

\*\* NOTE TO SPECIFIER \*\* Lite-Deck Fasteners are only used on fully adhered roofing systems.

* + 1. Lite-Deck Fastener: A oversized diameter fastener and associated 3 inch (76 mm) Lite-Deck Metal Plate for use on Fully Adhered Roofing Systems to attach insulation to gypsum decks.

\*\* NOTE TO SPECIFIER \*\* The HPVX is only used on mechanically attached roofing systems.

* + 1. HPVX Plate: A 2-3/8 inch (60 mm) diameter metal barbed fastening plate used with Versico HPVX, CD-10 or MP 14-10 Fasteners for membrane or insulation securement. This plate can be used for membrane or insulation securement on Mechanically Attached Roofing Systems.

\*\* NOTE TO SPECIFIER \*\* The HPV-XL Plate is only used on mechanically attached roofing systems.

* + 1. HPV-XL Plate: A 2-3/8 inch (60 mm) diameter metal barbed fastening plate with an oversized hole for use with Versico HPV-XL Fasteners for membrane securement on Mechanically Attached Roofing Systems.

\*\* NOTE TO SPECIFIER \*\* Seam fastening plates are only used on Fully adhered roofing systems.

* + 1. Seam Fastening Plate: A 2 inch (51 mm) diameter metal plate used for insulation attachment on Mechanically Attached Systems or membrane securement at angle changes on Fully Adhered Roofing Systems in conjunction with the appropriate Versico Fastener.
    2. Insulation Fastening Plate: A nominal 3 inch (76 mm) metal plate used for insulation attachment in conjunction with the appropriate Versico Fastener.

\*\* NOTE TO SPECIFIER \*\* Oval barbed plates are only used on mechanically attached roofing systems.

* + 1. Oval Barbed Plate: A 2-3/4 x 1-1/2 inches (70 x 38 mm) oval metal barbed fastening plate for use with Versico HPVX fasteners for securement of 10 feet (3048 mm) wide PVC membrane on Mechanically Attached Roofing Systems.
  1. EDGINGS AND TERMINATIONS

\*\* NOTE TO SPECIFIER \*\* Delete edging and termination options not required.

* + 1. VersiTrim 2000: Anchor bar roof edge fascia system consisting of 0.100 inch (2.5 mm) thick extruded aluminum bar, corrosion resistant stainless steel fasteners and snap-on fascia cover.
    2. VersiTrim 200: 24 gauge galvanized metal water dam. Finish as noted on the Finish Schedule of the Contract Drawings.
    3. VersiTrim Fascia: A metal anchor bar fascia system consisting of a formed quarter hard 0.050 inch (1.25 mm) aluminum retainer bar, corrosion resistant fasteners and a 0.040 inch (1 mm) aluminum or 24 gauge steel snap-on fascia cover.
    4. VersiTrim Drip Edge: 22 gauge pre-punched 90-degree angle cleat and 12 foot (3658 mm) long fascia sections. Kynar 500 or aluminum finish as noted on the Finish Schedule of the Contract Drawings.
    5. VersiFlex PVC Coated Metal: 24 gauge, galvanized steel sheet coated with a layer of non-reinforced VersiFlex flashing. Used to fabricate metal drip edges or other roof perimeter edging profiles. VersiFlex Membrane may be heat welded directly to the coated metal. Sheet sizes 4 by 10 feet (1219 x 3048 mm). Color to match membrane.
    6. VersiTrim Coping: Anchor cleat with pre-slotted holes, a concealed joint cover, and sections of coping cap. Kynar 500 or anodized aluminum finish as noted on the Finish Schedule of the Contract Drawings.
    7. Versico Termination Bar: 1 inch (13 mm) wide, 98-mil thick extruded aluminum bar pre-punched 6 inches (152 mm) on center with sealant ledge.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ROOF GARDEN COMPONENTS
     1. Roof Garden Assembly:

\*\* NOTE TO SPECIFIER \*\* Deep Roof Garden System, with growth media depth of 8 inches and up, includes a variety of plants including turf grass, annual or perennial flowers, shrubs and small trees. This system will require regular maintenance, such as watering, fertilizing, mowing and weeding. This system typically requires a structural concrete roof deck to support the larger dead load. A temporary or permanent irrigation system is required in these assemblies. The anticipated weight above the membrane assembly is generally between 6.5 and 7.5 pounds per square foot, per inch of system depth, in a saturated state. Delete if not required.

* + - 1. Intensive planting system.

\*\* NOTE TO SPECIFIER \*\* Medium Depth Roof Garden System, with growth media depth of 5 inches to 7 inches, includes plants such as sedums, herbs, grasses and other vegetation, which can grow in this depth of media. Drip, mist or spray irrigation systems may be required to support more diverse plant types or for installations in semi-arid climates. The anticipated weight above the membrane assembly is generally between 6 and 7 pounds per square foot, per inch of system depth, in a saturated state. Delete if not required.

* + - 1. Extensive planting system.

\*\* NOTE TO SPECIFIER \*\* Shallow Roof Garden System, with growth media depth 2.5 inches to 4 inches, is ideally suited for areas likely to receive little maintenance. Recommended plants include sedums and herbs. A temporary or permanent irrigation system is recommended in these assemblies. The anticipated weight above the membrane assembly is generally between 5.5 and 6 pounds per square foot, per inch of system depth, in a saturated state. Delete if not required.

* + - 1. Ultra-Extensive.
    1. Drainage Components:

\*\* NOTE TO SPECIFIER \*\* Delete drainage components not required.

* + - 1. Versico's MiraDRAIN 9800 Drainage Board:
         1. Panel Thickness: 0.04 inches (1.02 mm).
         2. Water Flow Rate: 95 gpm/sq. ft. in accordance with ASTM D 4491.
      2. MiraDRAIN G4 Roof Garden Drainage Composite: High impact polystyrene core with "cups" and high-flow overflow drains. A non-woven 100 percent post-consumer recycled polyester combination filter fabric and green moisture retention mat is bonded to the retention side of the molded core to prevent passage of particles into the water reservoirs. Drainage composite holds up to 0.32 inch (8 mm) of rainfall.
         1. Panel Thickness: 1.21 inches (31 mm).
         2. Water Flow Rate: 75 gpm per sf. ft. accordance with ASTM D 4491.
    1. Protective Mats:

\*\* NOTE TO SPECIFIER \*\* Delete protective mats not required.

* + - 1. Protection Fabric: Versico CCW 200V.

\*\* NOTE TO SPECIFIER \*\* Designed to prevent abrasion to the membrane when a root barrier is used in Intensive and Extensive Roof Garden assemblies. Delete if not required.

* + - 1. Protection Fabric: Versico 300HV. Polypropylene non-woven needle-punched fabric that is stabilized to resist soil chemicals, mildew, and insects and is non-biodegradable.

\*\* NOTE TO SPECIFIER \*\* Used in Deep or Intensive and Medium Depth or Extensive Roof Garden Systems. Delete if not required.

* + - 1. Root Barrier: Versico 40 mil non-reinforced polypropylene sheet specifically formulated for use in below grade and vegetated application to resist root growth and soil bacteria.

\*\* NOTE TO SPECIFIER \*\* In certain Deep or Intensive Roof Garden applications. Delete if not required.

* + - 1. Biobarrier: Synthetic hormone root barrier used in selective areas. Biobarrier repels root growth, discouraging contact with waterproofing membrane.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Hardscape:

\*\* NOTE TO SPECIFIER \*\* Delete hardscape not required.

* + - 1. Individual Concrete Plaza Pavers: 24 x 24 x 2 inches (610 mm x 610 mm x 51 mm) thick precast concrete pavers weighing a minimum of 18 psf with a minimum compressive strength of 6500 psi.
      2. Paver Pedestals: Rubber paver pedestals to elevate the surface of the pavers above the roof membrane and promote positive drainage and protection from freeze/thaw.
      3. Stone Ballast: Nominal 1-1/2 inches (38 mm) diameter rounded water worn gravel which conforms to ASTM D448, gradation size #4, applied at a minimum of 10 pounds per square foot.
      4. Other: Roof garden products not specified in this section but required or indicated such as concrete curbs, landscape lumber and landscape products.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Greenscape:
       1. Growing Medium: A mixture of mineral and organic soil components as selected by the landscape architect/designer or other appropriate landscape professional for the intended vegetation and climate.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Vegetation:
       1. Sedum Tile: Fully pre-vegetated coconut fiber mat designed to provide immediate full vegetative coverage.
       2. Sedum Clippings and Gel: Un-rooted sedum cuttings dispersed on the surface of growth media in conjunction with a water retention gel to aid in the plant rooting process.
       3. Plugs: Plants are pre-grown into soil "plugs" to be inserted into the surface of the growth media. Typically delivered in 10 x 20 inch (254 x 508 mm) trays containing 24 to 72 individual plants.
  1. WALKWAYS

\*\* NOTE TO SPECIFIER \*\* Delete walkway not required.

* + 1. Hot-air weld walkway pads to the membrane with the manufacturer's current application guidelines.
    2. Loose lay concrete pavers over an approved protection sheet in accordance with the manufacturer's current application guidelines.

1. EXECUTION
   1. EXAMINATION
      1. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
      3. Do not commence Work until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment.
      4. A vapor retarder / temporary roof, Versico 725 TR Air and Vapor Barrier/Temporary Roof, may be applied to protect the inside of the structure prior to the roof system installation.

\*\* NOTE TO SPECIFIER \*\* Retain only deck types found on this project. Delete roof deck(s) not required.

* 1. SUBSTRATE PREPARATION
     1. Structural Concrete Deck:
        1. Minimum deck thickness for structural concrete is 4 inches (102 mm).
        2. Allow roof deck to cured prior to application of the roofing system. Where curing is in question, evaluate surface moisture and deck's dryness with the ASTM D 4263 or hot bitumen test procedures.
        3. Repair cracks greater than 1/8 inch (3 mm) in width in accordance with the deck manufacturer's recommendations.
        4. Sumps for the roof drains shall be provided in the casting of the deck.
        5. Where insulation is to be adhered with hot asphalt, prime the deck with asphalt/concrete primer, ASTM D 41 at the rate of one gallon per 100 square feet (0.4 l per sq m). Allow the primer to dry prior to the application of the roofing system.
     2. Steel Deck:
        1. Metal decks shall be a minimum uncoated thickness of 22 gauge and have a G-90 galvanized finish on all panels.
        2. Decks shall comply with the gauge and span requirements in the current Factory Mutual Approval Guide and be installed in accordance with Loss Prevention Data Sheet 1-28 or specific FM approval.
        3. Remove any surface corrosion and repair severely corroded areas. Properly fasten loose or inadequately secured decking.
     3. Wood Deck (Plank / Heavy Timber):
        1. Wood boards shall be at least 1 inch (25 mm) nominal thickness and have a nominal width of 4 feet-6 inches (1372 mm).
        2. All boards shall have a bearing on rafters at each end and be securely nailed.
        3. Cover knotholes or cracks in excess of 1/4 inch (6 mm) with securely nailed sheet metal.
     4. Wood Deck (Plywood Deck):
        1. Plywood sheathing shall be CDX grade, minimum 4 ply, and not less than 15/32 inch (12 mm) thick.
        2. Install deck over joists spaced 24 inches (610 mm) on center or less. Install deck with all sides bearing on and secured to joist and cross blocking.
     5. Cementitious Wood Fiber:
        1. Decks shall be protected from the weather during storage and application; any wet or deformed decking shall be removed and replaced.
        2. Anchor all panels against uplift and lateral movement.
        3. Install deck level. Any deflection, irregularities, or otherwise damaged panels shall be corrected or replaced.
     6. Lightweight Insulating Concrete Deck:

\*\* NOTE TO SPECIFIER \*\* Delete the following paragraph if not specifying a fully adhered roofing system.

* + - 1. Lightweight insulating concrete decks are required to have a minimum thickness of 2 inches (51 mm), a minimum compressive strength of 200 psi (1.38 MPa) and a minimum density of 22 pcf (352 kg/sm) for Fully Adhered Roofing Systems.
      2. Moisture content of existing Lightweight concrete shall be under 20 percent when insulation is to be fastened directly to it.

\*\* NOTE TO SPECIFIER \*\* Insert project specific information regarding insulation types and attachment. Add or remove layers as necessary, or delete the entire article if not required.

* 1. INSULATION - SYSTEM DESIGN
     1. Base Layer:
        1. Type: \_\_\_\_\_\_\_\_.
        2. Thickness (in/mm): \_\_\_\_\_\_.
        3. Attachment Method: \_\_\_\_\_.
     2. Top Layer:
        1. Type: \_\_\_\_\_\_\_\_.
        2. Thickness (in/mm): \_\_\_\_\_\_.
        3. Attachment Method: \_\_\_\_\_.
     3. Tapered System:
        1. Type: \_\_\_\_\_\_\_\_.
        2. Field Slope: \_\_\_\_ inch per foot (\_\_\_\_ mm per m).
        3. Sump Slope: \_\_\_\_ inch per foot (\_\_\_\_ mm per m).
        4. Cricket Slope: \_\_\_\_ inch per foot (\_\_\_\_ mm per m).
        5. Attachment Method: \_\_\_\_\_.
  2. INSULATION PLACEMENT
     1. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch (6 mm). Stagger joints both horizontally and vertically if multiple layers are provided.
     2. Secure insulation to the substrate with the required mechanical fasteners or insulation adhesive in accordance with the manufacturer's current application guidelines.
     3. Do not install wet, damaged or warped insulation boards.
     4. Stagger joints in one direction unless joints are to be taped. Install insulation boards snug. Gaps between board joints shall not exceed 1/4 inch (6 mm). Fill all gaps in excess of 1/4 inch (6 mm) with same insulation material.
     5. Wood nailers shall be at least 3 1/2 inches (89 mm) wide or 1 inch (25 mm) wider than adjacent metal flange. Thickness shall equal that of insulation but not less than 1 inch (25 mm) thickness.
     6. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
     7. Do not install any more insulation than will be completely waterproofed each day.
  3. INSULATION ATTACHMENT
     1. Securely attach insulation to the roof deck for fully adhered or mechanically attached roofing systems. Attachment shall have been successfully tested to meet or exceed the calculated uplift pressure required by the International Building Code (ASCE-7) or ANSI/SPRI WD-1.

\*\* NOTE TO SPECIFIER \*\* Delete the next paragraph if a Mechanically Attached system is specified. FM Loss Prevention Data Sheet 1-29 no longer uses 50 and 75 percent increased fastener density in perimeter and corner areas for assemblies above FM 1-75.

* + 1. Enhance the perimeter and corner areas in accordance with the International Building Code (ASCE-7) or ANSI/SPRI WD-1.

\*\* NOTE TO SPECIFIER \*\* Delete the next paragraph if asphalt applied insulation is not specified

* + 1. Install insulation layers, maximum 4 feet by 4 feet (1220 mm by 1220 mm) board size, in a full and uniform mopping of hot asphalt applied at the rate of 25 lbs per square (1.2 kg per sq m). Stagger the joints of additional layers in relation to the insulation joints in the layers below by a minimum of 6 inches (152 mm).

\*\* NOTE TO SPECIFIER \*\* Delete the next paragraph if adhesive applied insulation is not specified

* + 1. Install insulation layers applied with adhesive, coverage rate as necessary to achieve the specified attachment and uplift rating. Press each board firmly into place after adhesive develops strings when touched, typically 1 1/2 to 2 minutes after adhesive was applied, and roll with a weighted roller. Add temporary weight and use relief cuts to ensure boards are well adhered. Stagger the joints of additional layers by a minimum of 6 inches (152 mm).

\*\* NOTE TO SPECIFIER \*\* Retain the next article Only if membrane is Fully Adhered

* 1. MEMBRANE PLACEMENT AND ATTACHMENT FOR FULLY ADHERED ROOFING SYSTEMS
     1. Position VersiFlex membrane over the acceptable substrate. Fold membrane sheet back lengthwise so half the underside of the membrane is exposed.
     2. Apply VersiFlex Bonding Adhesive in accordance with the manufacturer's published instructions, to the exposed underside of the membrane and the corresponding substrate area. Do not apply Bonding Adhesive along the splice edge of the membrane to be hot air welded over the adjoining sheet. Allow the adhesive to dry until it is tacky but will not string or stick to a dry finger touch.
        1. Roll the coated membrane into the coated substrate while avoiding wrinkles. Brush down the bonded section of the membrane sheet immediately after rolling the membrane into the adhesive with a soft bristle push broom to achieve maximum contact.
        2. Fold back the unbonded half of the sheet lengthwise and repeat the bonding procedures.
     3. Position adjoining sheets to allow a minimum overlap of 2 inches (51 mm).
     4. Hot-air weld the VersiFlex membrane sheets using the Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's hot air welding procedures.
     5. Continue to install adjoining membrane sheets in the same manner, overlapping edges a minimum of 2 inches (51 mm) and complete the bonding procedures as stated previously.

\*\* NOTE TO SPECIFIER \*\* Retain the next article Only if membrane is Mechanically Attached.

* 1. MEMBRANE PLACEMENT AND ATTACHMENT FOR MECHANICALLY ATTACHED ROOFING SYSTEMS
     1. Unroll and position membrane without stretching. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
     2. Secure the membrane with the required. Fasteners and Plates centered over the pre-printed marks approximately 1 1/2 inches (39 mm) from the edge of the membrane sheet.
     3. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's current application requirements.
     4. Attachment Schedule:

\*\* NOTE TO SPECIFIER \*\* Select field fastener density based on wind design criteria specified by the Architect or Engineer. Delete one of the next two paragraphs.

* + - 1. Field (Zone 1) Fastener Density: 12 inches (305 mm) O.C.
      2. Field (Zone 1) Fastener Density: 18 inches (457 mm) O.C.
      3. Perimeter (Zones 2 and 3) Fastener Density: 12 inches (305 mm) O.C.

\*\* NOTE TO SPECIFIER \*\* Select the appropriate number of perimeter sheets specified by the Architect or Engineer. Insert the required number where not listed. Delete three of the next four paragraphs.

* + - 1. Perimeter (Half-width) Sheets: 2.
      2. Perimeter (Half-width) Sheets: 3.
      3. Perimeter (Half-width) Sheets: 4.
      4. Perimeter (Half-width) Sheets: \_\_\_\_.
  1. SEAM WELDING
     1. Hot-air weld membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's current guidelines. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.

\*\* NOTE TO SPECIFIER \*\* Retain the next paragraph if .060 inch thick membrane is specified

* + 1. Overlay all splice intersections with VersiFlex T-Joint Covers.
    2. Probe all seams once the hot air welds have thoroughly cooled approximately 30 minutes.
    3. Repair all seam deficiencies the same day they are discovered.
    4. Apply Cut Edge Sealant on all cut edges of reinforced membrane, where the scrim reinforcement is exposed, after seam probing is complete. Cut Edge Sealant is not required on vertical splices.
  1. FLASHING
     1. Flashing of parapets, curbs, expansion joints and other parts of the roof shall be performed using VersiFlex reinforced membrane. VersiFlex non-reinforced membrane may be used for flashing pipe penetrations, Sealant Pockets, and scuppers, as well as inside and outside corners, when the use of pre-molded accessories is not feasible.
     2. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

\*\* NOTE TO SPECIFIER \*\* Retain the following Paragraph only if VersiFlex PVC Rib Profile is specified. Delete if not required.

* + 1. VersiFlex PVC Rib Profiles:
       1. The VersiFlex Rib Profile for use with VersiFleece PVC fully adhered roofing systems.
       2. The VersiFlex Rib Profiles should be positioned parallel to the laps of the installed PVC roofing system and parallel with the roof slope where possible.
       3. Ensure that all welding surfaces are clean and dry. Inspect all seam areas for proper weld prior to installing VersiFlex Rib Profile.
       4. VersiFlex Rib Profile spacing can be individually determined to achieve the desired appearance.
       5. Connecting multiple ribs is achieved by using fiberglass pins. Insert a pin half-way into the end of one profile. Connect the adjoining rib by inserting the exposed end of the pin into the alignment hole. Repeat previous steps for additional VersiFlex Rib profiles.
  1. WALKWAYS
     1. Install walkways at all traffic concentration points, such as roof hatches, access doors, rooftop ladders, etc., and all locations as identified on the Contract Drawings.

\*\* NOTE TO SPECIFIER \*\* Select Walkway requirement. Delete one of the next two paragraphs.

* + 1. Hot-air weld VersiFlex Walkway to the membrane in accordance with the manufacturer's current application guidelines.
    2. Loose lay concrete pavers over an approved protection sheet in accordance with the manufacturer's current application guidelines.
  1. DAILY SEALS
     1. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal shall be performed to temporarily close the membrane to prevent water infiltration.
     2. Complete an acceptable membrane seal in accordance with the manufacturer's requirements.
  2. CLEAN UP
     1. Perform daily clean-up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris shall be disposed of in a legally acceptable manner.
     2. Prior to the manufacturer's inspection for warranty, the applicator shall perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.
  3. PROTECTION
     1. Protect installed products until completion of project.
     2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION