**VersiFleece AC TPO Hot Mopped**

# Form-Spec

 **January 2025**

**Note to the User:** Some text has been colored and underlined so the specifier can customize a specification for a specific project. Other text (colored and underlined in parentheses) are notes to the specifier ONLY and should be deleted prior to completing specification. All information must be edited by the specifier to create a final draft of the project specification.

**PART 1 GENERAL**

**1.01 DESCRIPTION**

A. The Project Name is located at Address in City and State. Name of Project Manager, Project Manager/Coordinator, is the Owner's Representative and may be contacted regarding any questions or for a pre-bid job site inspection, Phone Number.

B. The project consists of installing Versico’s Hot Mopped Roofing System using VersiFleece AC TPO 120-mil, 135-mil or 155-mil membrane in conjunction with Type III or IV asphalt or SEBS modified asphalt as outlined below:

(Choose the appropriate paragraph and delete remainder)

Mop AC membrane directly to an existing **primed** smooth surfaced Type III or IV asphalt BUR, mineral surface cap sheet or SBS Modified Bitumen roof.

**OR**

Mop AC membrane in conjunction with two layers of Versico Type IV or VI Base sheet directly to a new or existing primed structural concrete deck. (Note: Base sheets are optional)

## OR

Mop AC membrane directly to mechanically fastened Versico G2 BASE Sheet or SureMB Vented Base Sheet over the gypsum deck, fibrous cementitious deck, wood deck or lightweight insulating concrete substrate.

## OR

Mop AC membrane directly to torched down Versico SureMB 90TG Base Sheet or SureMB 120TG Base Sheet over the gypsum deck, fibrous cementitious deck, wood deck or lightweight insulating concrete substrate.

 **OR**

Mop AC membrane to Versico Recovery Board, Securock, DEXCell or Approved Cover Board which is installed over insulation type and mechanically fastened or mopped to the Deck Type per manufacturer’s requirements.

**1.02 EXTENT OF WORK**

A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a VersiFleece AC TPO Hot Mopped Roofing System including flashings and insulation as specified herein and as indicated on the drawings in accordance with the manufacturer's most current specifications and details.

B. The roofing contractor shall be fully knowledgeable of all requirements of the contract documents and shall make themselves aware of all job site conditions that will affect their work.

C. The roofing contractor shall confirm all given information and advise the building owner, prior to bid, of any conflicts that will affect their cost proposal.

D. Any contractor who intends to submit a bid using a roofing system other than the approved manufacturer must submit for pre-qualification in writing fourteen (14) days prior to the bid date. Any contractor who fails to submit all information as requested will be subject to rejection. Bids stating "as per plans and specs" will be unacceptable.

**1.03 SUBMITTALS**

A. Prior to starting work, the roofing contractor must submit the following:

1. Shop drawings showing layout, details of construction and identification of materials.

2. A sample of the manufacturer's System Warranty.

3. Submit a letter of certification from the manufacturer which certifies the roofing contractor is authorized to install the manufacturer's roofing system and lists foremen who have received training from the manufacturer along with the dates training was received.

4. Certification of the manufacturer's warranty reserve.

B. Upon completion of the installed work, submit copies of the manufacturer's final inspection to the specifier prior to the issuance of the manufacturer's warranty.

**1.04 PRODUCT DELIVERY, STORAGE AND HANDLING**

A. Deliver materials to the job site in the manufacturer's original, unopened containers or wrappings with the manufacturer's name, brand name and installation instructions intact and legible. Deliver in sufficient quantity to permit work to continue without interruption.

B. Comply with the manufacturer's written instructions for proper material storage.

1. Store AC membrane in a dry area.

2. Store other materials between 60°F and 80°F in dry areas protected from water and direct sunlight. If exposed to lower temperature, restore to 60°F minimum temperature before using.

3. Store materials containing solvents in dry, well ventilated spaces with proper fire and safety precautions. Keep lids on tight. Use before expiration of their shelf life.

C. Insulation must be on pallets, off the ground and tightly covered with waterproof materials.

D. Any materials which are found to be damaged shall be removed and replaced at the applicator's expense.

**1.05 WORK SEQUENCE**

A. Schedule and execute work to prevent leaks and excessive traffic on completed roof sections. Care should be exercised to provide protection for the interior of the building and to ensure water does not flow beneath any completed sections of the membrane system.

B. Do not disrupt activities in occupied spaces.

**1.06 USE OF THE PREMISES**

A. Before beginning work, the roofing contractor must secure approval from the building owner's representative for the following:

1. Areas permitted for personnel parking.
2. Access to the site.
3. Areas permitted for storage of materials and debris.

4. Areas permitted for the location of cranes, hoists and chutes for loading and unloading materials to and from the roof.

B. Interior stairs or elevators may not be used for removing debris or delivering materials, except as authorized by the building superintendent.

**1.07 EXISTING CONDITIONS**

If discrepancies are discovered between the existing conditions and those noted on the drawings, immediately notify the owner's representative by phone and solicit the manufacturer's approval prior to commencing with the work. Necessary steps shall be taken to make the building watertight until the discrepancies are resolved.

**1.08 PRECONSTRUCTION CONFERENCE**

A. A pre-bid meeting will be held at the job site on Date at Time. Contact the owner's representative, Name and Title, at Phone Number if there are any questions.

B. Prior to bid submittal, the roofing contractor should schedule a job site inspection to observe actual conditions and verify all dimensions on the roof. The job site inspection may occur on the day of the pre-bid meeting or prior to such a meeting. Should access to the roof be necessary before or after the pre-bid meeting, the contractor must contact the owner's representative, Name and Title, at Phone Number to coordinate an appropriate time.

C. Bids must be forwarded to the following address no later than Time on Date:

Name and Address

D. Any conditions which are not shown on the shop drawings should be indicated on a copy of the shop drawing and included with bid submittal if necessary to clarify any conditions not shown.

**1.09 TEMPORARY FACILITIES AND CONTROLS**

A. Temporary Utilities:

1. Water, power for construction purposes and lighting are/are not available at the site and will/will not be made available to the roofing contractor.

2. Provide all hoses, valves and connections for water from a source designated by the owner when made available.

3. When available, electrical power should be extended as required from the source. Provide all trailers, connections and fused disconnects.

B. Temporary, Sanitary Facilities

Sanitary facilities will not be available at the job site. The roofing contractor shall be responsible for the provision and maintenance of portable toilets or their equal.

1. Building Site:

1. The roofing contractor shall use reasonable care and responsibility to protect the building and site against damages. The contractor shall be responsible for the correction of any damage incurred as a result of the performance of the contract.

2. The roofing contractor shall remove all debris from the job site in a timely and legally acceptable manner so as to not detract from the aesthetics or the functions of the building.

D. Security:

Obey the owner's requirements for personnel identification, inspection and other security measures.

**1.10 JOB SITE PROTECTION**

A. The roofing contractor shall adequately protect building, paved areas, service drives, lawn, shrubs, trees, etc. from damage while performing the required work. Provide canvas, boards and sheet metal (properly secured) as necessary for protection and remove protection material at completion. The contractor shall repair or be responsible for costs to repair all property damaged during the roofing application.

B. During the roofing contractor's performance of the work, the building owner will continue to occupy the existing building. The contractor shall take precautions to prevent the spread of dust and debris, particularly where such material may sift into the building. The roofing contractor shall provide labor and materials to construct, maintain and remove necessary, temporary enclosures to prevent dust or debris in the construction area(s) from entering the remainder of the building.

C. Do not overload any portion of the building, by either use of or placement of equipment, storage of debris, or storage of materials.

D. Protect against fire and flame spread. Maintain proper and adequate fire extinguishers.

E. Take precautions to prevent drains from clogging during the roofing application. Remove debris at the completion of each day's work and clean drains, if required. At completion, test drains to ensure the system is free running and drains are watertight. Remove strainers and plug drains in areas **where work is in progress**. Install flags or other telltales on plugs. Remove plugs each night and screen drain.

F. Store moisture susceptible materials above ground and protect with waterproof coverings.

G. Remove all traces of piled bulk material and return the job site to its original condition upon completion of the work.

**1.11 SAFETY**

The roofing contractor shall be responsible for all means and methods as they relate to safety and shall comply with all applicable local, state and federal requirements that are safety related. **Safety shall be the responsibility of the roofing contractor.** All related personnel shall be instructed daily to be mindful of the full time requirement to maintain a safe environment for the facility's occupants including staff, visitors, customers and the occurrence of the general public on or near the site.

**1.12 WORKMANSHIP**

A. Applicators installing new roof, flashing and related work shall be factory trained and approved by the manufacturer they are representing.

B. All work shall be of highest quality and in strict accordance with the manufacturer's published specifications and to the building owner's satisfaction.

C. There shall be a supervisor on the job site at all times while work is in progress.

**1.13 QUALITY ASSURANCE**

1. The Membrane Roofing System must achieve a UL Class A, B or C.
2. (choose the appropriate paragraph and delete remainder)

The specified roofing assembly must have been successfully tested by a qualified testing agency to resist the design uplift pressures calculated according to

ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies”

American Society of Civil Engineers (ASCE 7)

International Building Code (IBC)

DORA (Directory of Roof Assemblies)

and after multiplying the results with a safety factor of (determined by designing professional).

 **OR**

The specified roofing assembly must be rated by Factory Mutual Global (FMG) to meet or exceed the factored uplift pressures outlined in FMG Property Loss Prevention Data Sheet 1-28, and complies with FMG Property Loss Prevention Data Sheet 1-29 for enhancements at the perimeter and corners.

1. The membrane must be manufactured by the material supplier. Manufacturer’s supplying membrane made by others are not acceptable.
2. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
3. The roofing system must be installed by an applicator authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing applicator shall be thoroughly experienced and upon request be able to provide evidence of having at least five (5) years successful experience installing single-ply TPO roofing systems and having installed at least one (1) roofing application or several similar systems of equal or greater size within one year.
4. Provide adequate number of experienced workmen regularly engaged in this type of work who are skilled in the application techniques of the materials specified. Provide at least one thoroughly trained and an experienced superintendent on the job at all times roofing work is in progress.
5. There shall be no deviations made from this specification or the approved shop drawings without the prior written approval of the specifier. Any deviation from the manufacturer's installation procedures must be supported by written certification on manufacturer's letterhead and presented for the specifier's consideration.
6. Upon completion of the installation, the applicator shall arrange for an inspection to be made by a non-sales technical representative of the membrane manufacturer in order to determine whether or not corrective work will be required before the warranty will be issued. Notify the building owner seventy-two (72) hours prior to the manufacturer's final inspection.

**1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS**

Refer to Versico’s Hot Mopped Roofing System specification for General Job Site Considerations.

1. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
2. When positioning membrane sheets, exercise care to locate all field splices away from low spots and out of drain sumps. All field splices should be shingled to prevent bucking of water.
3. When loading materials onto the roof, the Versico Authorized Roofing Contractor must comply with the requirements of the building owner to prevent overloading and possible disturbance to the building structure.
4. Proceed with roofing work only when weather conditions are in compliance with the manufacturer's recommended limitations, and when conditions will permit the work to proceed in accordance with the manufacturer's requirements and recommendations.
5. Proceed with work so new roofing materials are not subject to construction traffic. When necessary, new roof sections shall be protected and inspected upon completion for possible damage.
6. Provide protection, such as 3/4 inch thick plywood, for all roof areas exposed to traffic during construction. Plywood must be smooth and free of fasteners and splinters.
7. The surface on which the insulation or roofing membrane is to be applied shall be clean, smooth, dry, and free of projections or contaminants that would prevent proper application of or be incompatible with the new installation, such as fins, sharp edges, foreign materials, oil and grease.
8. New roofing shall be complete and weather tight at the end of the work day.
9. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane.

**1.15 WARRANTY**

1. Provide manufacturer’s 10 year, 15 year, 20 year, 25 year or 30 year Total System Warranty covering both labor and material with no dollar limitation. The maximum wind speed coverage shall be peak gusts of 55 or 72 mph measured at 10 meters above ground level. Certification is required with bid submittal indicating the manufacturer has reviewed and agreed to such wind coverage.

**Note:** For projects specified with warranties greater than 20 year and/or wind coverage specified greater than 55 mph, additional design enhancements are required. Refer to Versico published VersiFleece AC TPO Specifications

Note:

|  |  |
| --- | --- |
| Warranty Length | Minimum Membrane Thickness |
| 10 or 15 year | 120-mil VersiFleece AC TPO |
| 20 year | 135-mil VersiFleece AC TPO |
| 25 or 30 year | 155-mil VersiFleece AC TPO in conjunction with Versico Modified Base Sheet |

1. Warranty shall also cover leaks caused by accidental punctures: 16 man-hours per year for 135-mil VersiFleece AC TPO.
2. Warranty shall also cover leaks caused by accidental punctures: 32 man-hours per year for 155-mil VersiFleece AC TPO.
3. Versico’s Accidental Puncture Warranty covers labor hours and material used during the repair. Maximum labor and material hours are dependent upon system design. Refer to the Warranty Availability Quick Reference Guide for coverage.
4. Warranty shall also cover leaks caused by hail:
5. Hail up to 1” diameter when 120-mil VersiFleece AC TPO is installed
6. Hail up to 2” diameter when 135-mil or 155-mil VersiFleece AC TPO is installed with modified asphalt
7. Pro-rated System Warranties shall not be accepted.
8. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

#### PART 2 PRODUCTS

The components of this roofing system are to be products of Versico. The installation, performance or integrity of products by others is not the responsibility of Versico and is expressly disclaimed by the Versico Warranty. Other components (asphalt and pressure relief vents) which are not supplied by Versico, when required for the installation of this roofing system, may be included as part of the Versico Warranty for a charge.

**2.01 MEMBRANE**

VersiFleece AC TPO membrane incorporates VersiWeld (white) 45-mil, 60-mil or 80-mil thick reinforced TPO membrane laminated to a 10 ounce per square yard, non-woven polyester, polypropylene blended fleece-backing resulting in a total thickness of approximately 120-mil, 135-mil or 155-mil. This membrane is available in a width of 6’ or 12’ and length of 75’. Along one edge the length of the membrane a nominal 3” wide selvage edge is provided for hot air welding.

* 1. **BASE SHEETS**

(choose the appropriate paragraph and delete remainder)

1. **Versico Base Sheets –** For use as insulation and membrane base sheets.
2. **SureMB 120TG Base –** 120-mil 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 that meets ASTM D6163 Type I, Grade S for SBS-modified bituminous sheet materials. Designed for use as a base-ply or inter-ply in Carlisle’s multiple-ply system and may be used as an air barrier, vapor barrier or temporary (Up to 60 days) roof. Available in 39-3/8" wide and 32’-9” long (107 square feet) weighing 0.79 lbs per square foot.
3. **SureMB 90 Base Ply –** 90-mil Glass fiber, reinforced, SBS-modified asphalt, base sheet that meets ASTM D 6163 Type I, Grade S for SBS-modified bituminous sheet materials. May be used as an air barrier, vapor barrier and temporary (Up to 60 days) roof. Available in 39-3/8" wide and 49’-1” long (161 square feet) weighing 0.58 lbs per square foot.
4. **SureMB 90TG Base –** 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 Carlisle’s multiple-ply system and can be used as an air barrier, vapor barrier or temporary (Up to 60 days) roof. Available in rolls 39-3/8” wide and 49’-1” long (164 square feet) and weighing 0.57 lbs per square foot.
5. **SureMB 70 SA Base Ply** – 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.
6. **SureMB Vented Base –** A heavyweight venting base sheet constructed from a fiberglass mat coated with weathering-grade asphalt which meets ASTM D4897 Type II and UL-G2. Typically used as a venting base sheet over lightweight insulating concrete or gypsum decks, used in conjunction with Carlisle Dual Prong Base Sheet Fastener. Available in rolls 39-3/8” wide and 33’ long (100 square feet) and weighing 0.86 lbs per square foot.
7. **Versico G2 Base Sheet** – A non-porous 28 pound base sheet, uniquely designed and constructed to be strong while remaining wrinkle resistant. The unique combination of strength and suppleness is achieved by coating the heavyweight, specially designed fiberglass mat with type IV asphalt. Meets ASTM D-4601.
8. **Carlisle Type IV Glass Ply Felt -** A heavyweight fiberglass mat containing heat-cured resinous binders saturated with type IV asphalt to meet ASTM D2178 Type IV and UL-G1, mopped over a nailed base sheet, a concrete deck, or an approved surface (minimum two plies) achieving a vapor/air retarder. When installed in a two ply format, Type IV Glass Ply Felt may be used as a temporary (Up to 90 days) roof. Available in rolls 36” wide and 180’ long (540 square feet) weighing 0.09 lbs per square foot.
9. **Carlisle Type VI Glass Ply Felt -** A heavyweight fiberglass mat containing heat-cured resinous binders saturated with type IV asphalt to meet ASTM D2178 Type VI and UL-G2, mopped over a nailed base sheet, a concrete deck, or an approved surface (minimum two plies) achieving a vapor/air retarder. When installed in a two ply format, Type VI Glass Ply Felt may be used as a temporary (Up to 90 days) roof. Available in rolls 36” wide and 180’ long (540 square feet) weighing 0.10 lbs per square foot.
	1. **BASE SHEET FASTENERS AND PLATES**

**Versico Dual-Prong Fastener** – A factory pre-assembled, 1.8” long fastener consisting of a precision tube formed from galvanized (G-90) coated steel, a 2.7” diameter disk formed from Galvalume (AX-55) coated steel and a locking staple of high tensile steel wire used to secure base sheets to fibrous cement, lightweight concrete and gypsum providing 70 lbs. of pullout resistance is achieved (40 lbs. Min.).

**2.04 HOT ASPHALT**

Asphalt (ASTM D 312): Type III or IV Hot Asphalt is typically specified for this roofing system. As an option, Modified SBS or SEBS Asphalt may be used. Application rate is 18-22 pounds per square (100 square feet) for membrane mopping, 23-25 pounds per square for base sheet installation, and 28-32 pounds per square for insulation attachment.

**2.05** **CUT-BACK ASPHALT PRIMER**

Cut-Back Asphalt Primer meets ASTM D 41 and is used to prime structural concrete decks, existing smooth BUR, mineral surfaced cap sheet, or modified bitumen membranes prior to mopping. Coverage rate is 1 to 2 gallons per 100 square feet depending on surface porosity.

**CAUTION:** Curing compounds used in conjunction with concrete decks must be confirmed by the concrete curing compound manufacturer as compatible with this attachment method. Certain curing compounds develop a wax-like seal or oil coating on the concrete’s surface that can prevent asphalt from adhering to the substrate.

**2.06** **ONE-WAY PRESSURE RELIEF VENT**

**One-Way Pressure Relief Vent** - A .060” thick spun aluminum vent with a base flange diameter of 11-1/2” and a height of no less than 11”. The vent base opening shall be 6-1/2” with 4-1/2” counterflashing and locking/vandal proof rain cap. Vents are required when the membrane is mopped over a secured base sheet directly over lightweight insulating concrete at the rate of 1 every 1,000 to 2,000 square feet depending on the type of lightweight insulating concrete.

**2.07** **INSULATION/UNDERLAYMENT**

1. When applicable, insulation shall be installed in multiple layers. The first and second layer of insulation shall be mechanically fastened or adhered with type III, IV or Modified Asphalt to the substrate in accordance with manufacturer's published specifications.
2. When insulation is used with Hot Mopped systems, the membrane underlayment shall be an approved cover board as supplied by Versico. Insulation below the Cover Board shall be Insulation Type supplied by Versico. Minimum R-value required is Note R-Value.

(Note: When asphalt attachment of insulation is specified, only polyisocyanurate insulation can be used. Insulation boards shall not exceed 4’ x 4’).

(choose the appropriate paragraph and delete remainder)

1. **Cover Boards**
	1. **SecurShield HD** – a rigid insulation panel composed of a high-density (109 psi max), closed-cell polyisocyanurate foam core laminated to coated-glass fiber-mat facer for use as a cover board or recover board. Available 1/2” thick 4’ x 8’ panel weight 11 lbs with an R-value of 2.5. Only for use with cold applied systems.
	2. **SecurShield HD Eco** – A bio-based (5%), rigid roof insulation panel composed of ½" high-density (109 psi max), closed-cell polyisocyanurate foam core bonded to a coated glass facer (CGF), meeting ASTM C1289, Type II, Class 4, Grade 1. Specifically designed for use as a cover board. Achieves a UL Class A fire rating direct to combustible deck. Available in 1/2” thick, 4’ x 4’ (5.5 lbs) and 4’ x 8’ (11 lbs) panels with an R-value of 2.5.
	3. **Securock Cover Board** – A uniform composition of fiber-reinforced with no facer for use as a cover board or a thermal barrier. Available in ¼” to 5/8” thick and 4’ x 4’ or 4’ x 8’ size boards. Long uninterrupted runs (>200’) may require slight gapping due to thermal expansion.
	4. **Versico Recovery Board** - A 1/2” or 1” thick high-density wood fiberboard with an asphalt coated facer for use as a cover board or recover board. Available 1/2” or 1” thick and 4’ x 4’ or 4’ x 8’ size boards.
	5. **DensDeck Prime** –gypsum core that incorporates glass-mat facings on the top and bottom side. The top surface is pre-primed and provides excellent bond strength for adhered membrane for use as a cover board. Available in 1/4” to 5/8” and 4’ x 4’ or 4’ x 8’ size boards. Only for use with cold applied systems.
	6. **DensDeck StormX Prime** – a reinforced gypsum cover board with an enhanced, moisture-resistant core and coated glass mat facers on the top and bottom side. The top surface is pre-primed and provides excellent bond strength for adhered membrane for use as a cover board. DensDeck StormX Prime is extremely durable and is approved for use in assemblies meeting FM’s Very Severe Hail (VSH) Classification. Available in 5/8” thickness and 4’ x 4’ or 4’ x 8’ size boards.
	7. **DEXCell** – A mold & mildew resistant, gypsum substrate board with coated fiberglass facers, used for thermal protection and acoustical enhancement of roof systems. May be used as a substrate for a vapor retarder and /or the continuous substrate for the application of commercial roofing applications. Available in 1/4”, 1/2” and 5/8” thicknesses in 4’ x 8’ boards.
	8. **DEXCell FA** – A mold & mildew resistant, gypsum substrate board with heavy duty, coated fiberglass facers, used for thermal protection and acoustical enhancement of roof systems. May be used as a substrate for a vapor retarder and /or the continuous substrate for the application of commercial roofing applications. The precoated, fiberglass facers are designed to increase adhesive coverage and enhance performance of the bond strength of the system. Available in 1/4”, 1/2” and 5/8” thicknesses in 4’ x 4’ and 4’ x 8’ boards.
	9. **DEXCell Cement Roof Board** – A mold & mildew resistant, Portland Cement, lightweight aggregate roof board with heavy-duty fiberglass mesh facers used as a substrate board, thermal barrier and cover board for commercial roofing applications. Available in 7/16” and 5/8” thicknesses in 4’ x 4’ and 4’ x 8’ boards.
	10. **DEXCell FA VSH** – A reinforced gypsum panel with enhanced moisture resistant gypsum core and heavy duty coated glass facers used as a substrate board, thermal barrier and cover board for commercial roofing applications, approved for use in single-ply and multi-ply assemblies meeting FM Very Severe Hail rating. Available in 5/8” thickness in 4’ x 4’ and 4’ x 8’ boards.
2. **Insulation Boards**
	1. **Versico Versicore MP-H Polyiso** – A foam core insulation board covered on both sides with a medium weight fiber-reinforced felt facer meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi). The product is available in 4’ x 8’ standard size with a thickness from 1 to 4 inches. 4’ x 4’ tapered panels are also available. Specified beneath a mechanically fastened Versico Recovery Board.
	2. **Versico SecurShield Polyisocyanurate** – A foam core insulation board covered on both sides with a coasted glass fiber mat facer meeting ASTM C 1289-06, Type II, Class 2, Grade 2 (20 psi) or Grade 3 (25 psi). The product is available in 4’ x 8’ standard size with a thickness from 1 to 4 inches. 4’ x 4’ tapered panels are also available.
	3. **Versico** **SecurShield Eco –** A bio-based (5%), rigid roof insulation panel composed of a closed-cell polyisocyanurate foam core bonded to high performance, coated glass facers (CGF). Achieves a UL Class A fire rating direct to combustible deck. ASTM C 1289, Type II, Class 2, Grade 2 (20 psi) or Grade 3 (25 psi), available in 4’ x 8’ standard size with a thickness from 1 to 4 inches. 4’ x 4’ tapered panels are also available.
	4. **Versico SecurShield HD Composite –** Composite insulation panel comprised of ½-inch high-density Polyiso cover board (109 psi max) laminated during the manufacturing process to SecurShield rigid Polyiso roof insulation meeting ASTM C1289 Type II, Class2, Grade 2 (20 psi) or Grade 3 (25 psi). Available in 4’ x 8’ boards with thickness from 2” to 4.5”. 4’ x 4’ panels are also available.
	5. **Versico Durafacer Polyiso Composite (OSB) –** Polyiso insulation bonded on the bottom side with a medium weight fiber reinforced felt facer and laminated with a top surface of 7/16” or 5/8” thick Oriented Strand Board (OSB) meeting ASTM C 1289-06, Type II, Class 1, Grade 2 (20 psi) or Grade 3 (25 psi). Available in 4’ x 8’ boards with a thickness from 1-1/2” to 4”.
	6. **Versico MP-HWF Polyiso** – A composite insulation panel composed of a closed-cell polyisocyanurate foam core bonded during manufacturing process to ½-inch asphalt-coated, high-density wood fiberboard on the other meeting ASTM C1289-06, Type II Class1, Grade 2 (20 psi) or Grade 3 (25 psi). Minimum thickness is 1.5-inches and maximum size 4’ x 8’.
	7. **InsulFoam I (EPS: Expanded Polystyrene) –** A closed-cell lightweight expanded polystyrene (EPS) that meets ASTM C578, Type I. Nominal density of 1.0 lbs/cubic ft (pcf) available in 4’ x 4’ or 4’ x 8’ sizes with thickness from ¼” to 40”. Custom lengths, widths and tapered boards are available. Specified beneath a mechanically fastened Versico Recovery Board.
	8. **InsulFoam VIII (EPS: Expanded Polystyrene) –** A closed-cell lightweight expanded polystyrene (EPS) that meets ASTM C578, Type VIII. Nominal density of 1.25 lbs/cubic ft (pcf) available in 4’ x 4’ or 4’ x 8’ sizes with thickness from ¼” to 40”. Custom lengths, widths and tapered boards are available. Specified beneath a mechanically fastened Versico Recovery Board.
	9. **InsulFoam II (EPS: Expanded Polystyrene) –** A closed-cell lightweight expanded polystyrene (EPS) that meets ASTM C578, Type II. Nominal density of 1.5 lbs/cubic ft (pcf) available in 4’ x 4’ or 4’ x 8’ sizes with thickness from ¼” to 40”. Custom lengths, widths and tapered boards are available. Specified beneath a mechanically fastened Versico Recovery Board.
	10. **InsulFoam IX (EPS: Expanded Polystyrene) –** A closed-cell lightweight expanded polystyrene (EPS) that meets ASTM C578, Type IX. Nominal density of 2.0 lbs/cubic ft (pcf) available in 4’ x 4’ or 4’ x 8’ sizes with thickness from ¼” to 40”. Custom lengths, widths and tapered boards are available. Specified beneath a mechanically fastened Versico Recovery Board.
	11. **InsulLam –** InsulFoam expanded polystyrene (EPS) insulation laminated with a top surface of 1/2" Versico Recovery Board. Available in 4’ x 8’ boards with thickness from 1-1/2” to 7” specified mechanically fastened to the deck.
	12. **XPS: Extruded Polystyrene –** Available through Versico is dimensionally stable with high thermal and low water absorption performance capability. XPS is available in varying compressive strengths thicknesses and sizes. Refer to specific product data sheets for physical properties and additional technical information. Specified beneath Versico Recovery Board.
		1. Thermapink 18 or 25 Extruded Polystyrene
		2. Foamular 400 or Durapink Extruded Polystyrene
		3. Dow Recovermate, Dow Styrofoam Deckmate, or Dow Styrofoam Deckmate Plus Extruded Polystyrene
	13. **FASTENING COMPONENTS**

To be used for mechanical attachment of insulation and to provide additional membrane securement:

(Delete the Fastener/Insulation Plate OR Adhesives which will not be used)

1. **Fasteners, Plates and Bars**
2. **HPV Fasteners**: a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
3. **HPVX Fasteners**: A heavy duty #15 threaded fastener with a #3 phillips drive used for insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
4. **Pre-Assembled ASAP Fasteners:** A pre-assembled 3” diameter Plastic Plate and # 12 threaded fastener with a #3 drive used for insulation attachment into steel or wood decks. Installed using OMG Fastening Tools.
5. **InsulTite Fasteners:** A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.
6. **CD-10 Fasteners**: A non-threaded, hammer driven fastener used with structural concrete roof decks rated 3,000 psi or greater.
7. **MP 14-10 Fasteners:** A #14 threaded fastener with a #3 phillips drive used for minimum 3,000 psi concrete decks.
8. **Polymer Gyptec Fasteners**: A non-penetrating, plastic fastener and corresponding 3” diameter plate used with lightweight deck substrates such as cementitious wood fiber, gypsum, and lightweight insulating concrete.
9. **Term Bar Nail-Ins**: A 1-1/4” long expansion anchor with a zinc plated steel drive pin used for fastening the Versico Termination Bar or Seam Fastening Plates to concrete, brick, or block walls.
10. **Insulation Fastening Plates**: a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
11. **Insulation Adhesives**

(choose the appropriate paragraph and delete remainder)

1. **Type III or IV Asphalt:** Application rate is 28-32 pounds per square for insulation attachment.
2. **Modified SBS or SEBS Asphalt:** Application rate is 28-32 pounds per square for insulation attachment.

**2.09 ADHESIVES, CLEANERS AND SEALANTS**

All products shall be furnished by Versico and specifically formulated for the intended purpose.

(Delete the Adhesive, Primer or Cleaner which will not be used)

1. **VersiWeld Bonding Adhesive:** A high-strength, synthetic rubber adhesive used for bonding VersiWeld membrane to various surfaces. The adhesive is applied to both the membrane and the substrate at a coverage rate of approximately 60 square feet per gallon per finished surface (includes coverage on both surfaces).
2. **Low VOC Bonding Adhesive for TPO:**  This product meets the <250 gpl VOC (volatile organic compound) content requirements of the OTC Model Rule for Single-Ply Roofing Adhesives. A high strength, solvent-based contact adhesive that allows bonding of TPO membrane to various porous and non-porous substrates. Apply at a rate of 60 ft2 per gallon finished surface. Available in 5 gallon pails. This product does not comply with southern California counties with additional restrictions on solvents.See Versico’s Product Data Sheet for a listing of the counties involved.
3. **Versico Weathered Membrane Cleaner:** A clear, solvent-based cleaner used to loosen and remove dirt and other contaminants from the surface of exposed EPDM membrane (for repairs, etc.) prior to applying EPDM Primer. Weathered Membrane Cleaner can also be used when applying Splicing Cement. Available in 1 and 5-gallon pails.
4. **Lap Sealant:** A black, heavy-bodied material used to seal the exposed edges of a membrane splice. A pre-formed Lap Sealant tool is included in each carton of Lap Sealant. Available in tubes.
5. **Water Cut-Off Mastic:** A one-component, low viscosity, self-wetting, Butyl blend mastic used as a sealing agent between the EPDM membrane or Uncured EPDM Flashing and applicable substrates. Available in tubes.
6. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.
7. **Cut Edge Sealant:** A clear sealant used to seal cut edges of reinforced VersiWeld membrane. A coverage rate of approximately 225 - 275 linear feet per squeeze bottle can be achieved when a 1/8" diameter bead is applied.
8. **White One-Part Pourable Sealer:** Available in black or white, a one-component, moisture curing, elastomeric polyether sealant used for attaching lightning rod bases and ground cable clips to the membrane surface and as a sealant around hard-to-flash penetrations such as clusters of pipes.
9. **TPO Primer:** A solvent-based primer used to prepare the surface of VersiWeld Membrane prior to application of Pressure-Sensitive Coverstrip and TPO Pressure-Sensitive RUSS.
10. **TPO Low VOC Primer:** A solvent-based, low solids primer used to prepare the surface of VersiWeld Membrane prior to application of Pressure-Sensitive Coverstrip and TPO Pressure-Sensitive RUSS.

(choose the appropriate Primer and delete remainder)

1. CCW 702 Primer and 702LV Primer (Low VOC): A single component, solvent based, high-tack primer used to provide maximum adhesion between VapAir Seal 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 per gallon on smooth finishes (i.e., concrete) to 75 square feet per gallon on porous surfaces (i.e., DensDeck Prime gypsum board). Available in 5-gallon containers. CCW 702LV Primer contains less than 250g/L VOCs and meets South Coast Air Quality Management District (SCAQMD) and Leadership in Energy and Environmental Design (LEED) Requirements for Volatile Organic Compounds.
2. **CCW 702 WB:** a high-tack, water-based contact adhesive for promoting adhesion of Versico air/vapor barrier membranes and an approved substrate (i.e., concrete, DensDeck Prime, Securock, and DEXCell). Applied by roller, brush or spray with an application rate of approximately 200 sq. ft. per gallon. Available in 5-gallon containers. CCW 702 WB Primer contains 57g/L VOCs and meets South Coast Air Quality Management District (SCAQMD) and Leadership in Energy and Environmental Design (LEED) Requirements for Volatile Organic Compounds.
3. **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: bonding VersiWeld membrane to various surfaces, enhancing the bond between Versico’s VapAir Seal 725TR and various substrates, priming unexposed asphalt prior to applying Flexible DASH Adhesive and for adhering VersiGard FleeceBACK and VersiGard EPDM membrane to vertical walls. Coverage rate is approximately 2,000-2,500 sq. ft. per #40 cylinder and 4,000-5,000 sq. ft. per #85 cylinder as a primer, in a single-sided application and 750 sq. ft. per #40 cylinder and 1,500 sq. ft. per #85 cylinder as an adhesive for vertical walls, in a double-sided application.

**2.10 METAL EDGING AND MEMBRANE TERMINATIONS**

(Choose the appropriate type of metal edging or membrane termination and delete the types which will not be used)

1. **General:** All metal edging s shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code.

(The products below have been grouped by suppliers and performance priority, as well as their code ratings. Make your selection and delete remainder.)

1. **(OMG Supplied -Remove name after selection)**
	1. **VersiTrim 300:** a coping or fascia, snap-on edge system consisting of a 24 gauge galvanized metal water dam and .050” or .063” thick Kynar 500, clear and colored anodized finish or 24 gauge steel, Kynar 500 finish. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. Coping FM Approved 1-90 with 20 ga. Cleat, 1-180 with 16 ga. Cleat. Fascia FM Approved 1-225.
	2. **VersiTrim 3000:** a metal fascia system with a 20 gauge steel retainer bar and .032”, .040” or .050” thick aluminum or 24 gauge galvanized steel fascia. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. 3000 Coping FM Approved 1-465 with .050 aluminum retainer, 1-180 with 20 ga. Steel retainer. 3000 XT Coping FM Approved 1-315.
2. **(Metal Era Supplied – Remove name after selection)**
3. **VersiTrim 200:** a coping or fascia, snap-on edge system consisting of a 24 gauge galvanized metal water dam and .040”, .050” or .063” thick Kynar 500, clear and colored anodized finish or 24 gauge steel, Kynar 500 finish. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. Coping FM Approved 1-90. Fascia FM Approved 1-195.
4. **VersiTrim 2000**: a metal fascia system with an extruded aluminum anchor bar and .040” thick aluminum or 24 gauge galvanized steel fascia. Metal fascia color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified. 2000 Fascia FM Approved 1-645. 2000 Extended Fascia FM Approved 1-270. 2000 Canted Fascia FM Approved 1-270.
5. **(Metal Era Supplied – Remove name after selction)( NO FM Rating Available)**
6. **VersiTrim One Fascia:** A snap-on edge system consisting of a 20 gauge retainer bar, corrosion resistant fasteners and a 24 gauge or 0.040 aluminum Kynar finished fascia cover. A spring clip holds the fascia cover in place. Available in sizes up to 8” fascia height 12’ long. Metal fascia color shall be designated by the Owner’s Representative. ANSI/SPRI ES-1 Certified.
7. **VersiTrim One Coping:** A snap-on coping edge system consisting of a 24 gauge retainer bar (face side only), corrosion resistant fasteners and a 24 gauge or 0.040 aluminum Kynar finished coping cover. The coping cover is secured by clipping on the retainer bar and fastened on the backside with corrosion resistant fasteners (with rubber washer). Available for wall thicknesses up to 30”. Metal coping cap color shall be as designated by the Owner's Representative. ANSI/SPRI ES-1 Certified.
8. **Drip Edge**: a metal fascia/edge system with a 22 or 24 gauge continuous anchor cleat and .032 inch thick aluminum or 24 gauge steel fascia. Metal fascia color shall be as designated by the Owner's Representative.
9. **VersiTrim Coping**: incorporates a 20 gauge anchor cleat with 4 pre-slotted holes, a concealed joint cover and 10 foot continuous sections of coping cap; can accommodate minimum 5 “ wide parapet walls. Metal coping cap color shall be as designated by the Owner's Representative.
10. **Termination Bar**: a 1” wide and .098” thick extruded aluminum bar pre-punched 6” on center; incorporates a sealant ledge to support Lap Sealant and provide increased stability for membrane terminations.
11. **VersiTrim Term Bar Fascia:** A 1.75” wide formed aluminum termination bar with pre-slotted fastening holes for ease of locating and installing. The decorative cover is available in 0.040” aluminum or 24-gauge galvanized steel. VersiTrim Term Bar Fascia is manufactured in 12’ lengths for fewer joints/seams, fewer sections to handle and faster installation.

**2.11 WALKWAYS**

Protective surfacing for roof traffic shall be VersiWeld Heat Weldable Walkway Rolls (34" wide by 50’ long and nominal 180 mils thick) heat welded to the AC membrane using an automated heat welder or hand held heat welder. Color to be white, tan or gray.

**2.12 OTHER MATERIALS**

1. **Versico VapAir Seal 725TR Air & Vapor Barrier / Temporary Roof:** 725TR is a 40-mil composite consisting of 35-mils of self-adhering rubberized asphalt factory laminated to a 5-mil polyethylene film with an adhesion textured surface. 725TR roll dimensions are 39” x 100’ and the product is applied after priming an acceptable substrate with CCW 702, 702-LV or Cav-Grip 3V primer.
2. **Versico VapAir Seal MD Air and Vapor Barrier:** a reinforced composite aluminum foil with self-adhesive SBS backing and removable poly release film. Used for direct application over metal decks. Available in rolls 42.5" wide by 131.23” long (460 square feet).

(Metal Flashing, if required, and miscellaneous items needed to fulfill the project requirements)

**PART 3 EXECUTION**

**3.01 GENERAL**

A. Comply with the manufacturer's published instructions for the installation of the membrane roofing system including proper substrate preparation, job site considerations and weather restrictions.

B. Position sheets to accommodate contours of the roof deck and shingle splices to avoid bucking water.

**3.02 VAPOR RETARDERS**

1. **General:**

The use of a vapor retarder to protect insulation and reduce moisture accumula­tion within an insulated roofing assembly should be investigated, especially on projects with high interior humidity, such as, swimming pools, breweries, pulp mills, etc.

1. In the generally temperate climate of the United States, during the winter months, water vapor flows upward from a heated, more humid interior toward a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.
2. On cold storage/freezer facilities, the perimeter details must be selected to provide an air seal and prevent outside air from infiltrating and condensing within the roofing assembly.
3. Consult the latest publications by ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) and NRCA (National Roofing Contractors Association) for specific information.
4. If insulation is to be adhered to the vapor retarder with Flexible DASH Adhesive, the 725 TR vapor retarder must be compatible and shall be fully adhered to the substrate. Available products include Versico supplied “peel and stick” rubberized asphalt membrane with compatible film coating (Versico VapAir Seal 725TR Air and Vapor Barrier), and spray or roller applied butyl coatings. Installation requirements for Versico’s 725 Air and Vapor Barrier are identified in Versico published specification.
5. **VapAir Seal 725TR Installation:**
6. **Surface Preparation**: Concrete shall be in place for 7 days minimum and the substrate must be dry. The surface shall have a smooth finish and be free of voids, spalled areas, sharp protrusions, loose aggregate, latence and form release agents. In the event of rain, concrete must be allowed to dry before primer is applied.
7. **Primer**: Surfaces to receive Versico VapAir Seal 725TR Air and Vapor Barrier must be clean and dry. Prime with CCW 702 or 702LV or CAV-GRIP 3V Primer. Apply Primer by spray, brush or with a long nap roller at the applicable coverage rate noted above. At 75° F allow primer to dry 1 hour minimum. Primer has a satisfactory cure when it will not transfer when touched. Prime only areas to be waterproofed the same day. Re-prime if area becomes dirty.
8. **Application**: Apply Versico VapAir Seal 725TR Air and Vapor Barrier from low to high point, in a shingle fashion, so that laps will shed water. Overlap all edges at lease 2-1/2". End laps shall be staggered. Place membrane carefully so as to avoid wrinkles and fishmouths. Immediately after installation, roll with a 30” wide, 150 pound weighted segmented steel roller.
9. **Insulation Installation:** Ensure surface of Versico VapAir Seal 725TR Air and Vapor Barrier is dry prior to installing insulation. Place insulation over the surface and mechanically fasten to the roof deck or adhere to the vapor barrier with Flexible DASH Adhesive in accordance with this Versico Specification.

1. For metal decks, VapAir Seal MD Air and Vapor Barrier is specifically designed for direct application to fluted steel decks. It may also be used in conjunction with either Versico’s CAV-GRIP 3V on vertical wall surfaces, such as structural concrete, gypsum, Securock, DensDeck Prime, DensDeck StormX Prime, DEXCell and plywood substrates.
2. **VapAir Seal MD Installation:**
3. **Surface Preparation**: The surface shall have a smooth finish and be free of voids, spalled areas, sharp protrusions, loose aggregate, laitance and form release agents. In the event of rain, concrete must be allowed to dry before primer is applied.
4. **Primer**: Surfaces to receive VapAir Seal MD Air and Vapor Barrier must be clean and dry. Prime with CCW 702 or 702LV or CAV-GRIP 3V Primer. Apply Primer by spray, brush or with a long nap roller at the applicable coverage rate noted above. At 75° F allow primer to dry 1 hour minimum. Primer has a satisfactory cure when it will not transfer when touched. Prime only areas to be waterproofed the same day. Re-prime if area becomes dirty.
5. **Application**: Apply VapAir Seal MD Air and Vapor Barrier to the metal deck from low to high point, in a shingle fashion, so that laps will shed water. Overlap all edges at lease 2-1/2". End laps shall be staggered. Place either a 6” wide section of 24 gauge sheet metal or a 6” wide section of VapAir Seal MD directly on the metal under each end lap, perpendicular to the end lap, to ensure a solid surface to roll the end lap together. Seams and end laps must be rolled with a 2” seam roller or stand-up seam roller. Place membrane carefully so as to avoid wrinkles and fish mouths. Immediately after installation, broom the sheet to ensure proper contact to the metal.
6. **Insulation Installation:** Ensure surface of VapAir Seal MD Air and Vapor Barrier is dry prior to installing insulation. Place insulation over the surface and mechanically fasten to the roof deck accordance with this Versico Specification.

**3.02 INSULATION PLACEMENT**

A. Install insulation or membrane underlayment over the substrate with boards butted together. Fill joints or gaps greater than 1/4 inch with an appropriate material. Stagger joints both horizontally and vertically if multiple layers are provided.

B. Secure insulation to the substrate with hot asphalt or mechanical fasteners in accordance with the manufacturer's specifications.

**3.03 MEMBRANE INSTALLATION**

1. **General**
	1. Membrane shall be stored in a dry area to prevent absorption of moisture in the fleece backing. If moisture is present, it must be removed with a wet vac system and the membrane must be allowed to fully dry prior to membrane adhesion.
	2. The temperature of the asphalt during application shall be within 25° F from the EVT (Equiviscous Temperature). The manufacturer’s heating instructions (i.e., maximum heating temperature, prolonged storage temperature guidelines) must be strictly followed.
	3. The coverage rate of asphalt shall be 18-22 pounds per square (100 square feet). It is important that “heavy spots” of asphalt, typically occurring at mopping overlaps or where the mop is first positioned, be avoided. At these areas, the asphalt must be spread evenly to avoid a heavy coverage rate that can cause asphalt saturation of the fleece backing. Asphalt saturation of the fleece must be avoided.
	4. If spreaders are used to apply asphalt, care must be taken to ensure the proper coverage rate, 18-22 pounds per square, is maintained. Do not overlap asphalt layers at multiple pass lines since the heavy coverage rate occurring at these overlapping areas must be avoided.
	5. Mopping the membrane directly to Polyisocyanurate insulation is not permitted. Approved cover board must be used as an overlayment when insulation is specified. Versico Modified Base Sheet may be used in place of the Versico Recovery Board when fastened to a steel or wood deck following manufacturer’s requirements.
2. When positioning membrane along the length for heat welded splices, allow the fleece backing to extend approximately 1/2” above adjoining membrane to avoid direct contact between TPO membrane and hot asphalt.
3. When using a mop to apply asphalt, position the membrane over the substrate overlapping adjacent sheets to accommodate membrane splicing and fold in half lengthwise to expose the substrate and the back side of the membrane (full width of the membrane by approximately half the length).

Beginning at the membrane fold, apply asphalt to the full width of the membrane extending a maximum of 3 to 6 feet while rolling the membrane into the asphalt immediately. The asphalt temperature at the time of membrane adhesion must be above 350° F. Continue to apply asphalt for the full width of the membrane extending 3 to 6 feet at a time while embedding the membrane into the asphalt until the entire half of the sheet is adhered. Fold back the unbonded half of the membrane and repeat the bonding procedures identified above.

1. When using spreaders to apply asphalt, the membrane is folded widthwise dependent on the size of the spreader (36” – 57” wide); i.e., if a 36" wide spreader is used, the membrane will be folded to expose approximately a 36" wide by 50' long area. After the asphalt is applied in a single pass, the membrane is rolled into the asphalt. After mopping the membrane, apply asphalt to the remaining substrate area in single passes and continue to bond membrane as identified above.
	1. Membrane must be embedded into asphalt immediately after each spreader pass to ensure asphalt temperature is at least 350° F at the time of membrane embedment.
	2. Take care that the asphalt is not dropped directly on the back of the membrane. Use a mop to spread asphalt at pass lines and under sheet folds to prevent a heavy coverage rate.
		1. After membrane mopping, immediately after adhesion, **brush down the sheet with a soft bristled broom using light to medium pressure. Do not use weighted rollers or heavy pressure when brooming the membrane to avoid asphalt saturation of the fleece.**

**3.04 MEMBRANE HOT AIR WELDING PROCEDURES**

1. **General**

The AC membrane has a selvage edge (the fleece-backing is discontinued) along the length of the sheet for membrane splicing. Selvage edges are not provided along the width of the membrane; adjoining membrane sheets must be butted together and overlaid with 6 inch wide VersiWeld Reinforced membrane heat welded on all sides.

B. **Hot Air Welding Procedures**

1. Hot air weld the VersiFleece AC TPO membrane using an Automatic Hot Air Welding Machine or Hot Air Hand Welder in accordance with the manufacturer's specifications. At all splice intersections, roll the seam with a silicone roller to ensure a continuous hot air welded seam.

 Note: When using 115-mil thick or thicker membrane, all splice intersections shall be overlaid with VersiWeld T-Joint covers or non-reinforced flashing

1. Probe all seams once the hot air welds have thoroughly cooled (approximately 30 minutes).
2. Repair all seam deficiencies the same day they are discovered.
3. 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.

**3.05 FLASHING**

1. Flashing of parapets, curbs, expansion joints and other parts of the roof must be performed using VersiFleece AC TPO membrane or VersiWeld reinforced membrane. VersiWeld non-reinforced membrane can 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.
3. One Way Pressure Relief Vents, installed and flashed according to the manufacturers requirements, are required for the following projects:
4. When the membrane is mopped over a nailed base sheet directly over lightweight insulating concrete substrates. Vents are installed at the rate of 1 every 1,000 square feet over vermiculite lightweight insulating concrete and 1 every 2,000 square feet over cellular or perlite lightweight insulating concrete

**3.06 WALKWAYS**

A. Install walkways at all traffic concentration points (such as roof hatches, access doors, rooftop ladders, etc.) and all locations as identified on the specifier's drawing.

B. Adhere walkways to the membrane in accordance with the manufacturer's specifications.

Note: Pavers are not recommended when the roof slope exceeds 2 inches in 12 inches

**3.07 DAILY SEAL**

1. On phased roofing, when the completion of flashings and terminations is not achieved by the end of the work day, a daily seal must be performed to temporarily close the membrane to prevent water infiltration.
2. Use Pourable Sealer, “closed cell” urethane foam or hot asphalt as recommended by the manufacturer and seal the membrane edge so it does not buck water.

**3.08 CLEAN UP**

A. Perform daily clean up to collect all wrappings, empty containers, paper, and other debris from the project site. Upon completion, all debris must be disposed of in a legally acceptable manner.

B. Prior to the manufacturer's inspection for warranty, the applicator must perform a pre-inspection to review all work and to verify all flashing has been completed as well as the application of all caulking.

 **END OF SPECIFICATION**