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# VersiGard Reinforced Mechanically Attached Form-Spec

July, 2019

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**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. This 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 Phone Number.
- B. The project consists of installing Versico's VersiGard Reinforced (black) Mechanically Attached Roofing System as outlined below:

(choose the appropriate paragraph and delete remainder)

Apply the Mechanically Attached EPDM Roofing System in conjunction with Insulation Type over the new Deck Type roof deck.

OR

Apply the Mechanically Attached EPDM Roofing System in conjunction with Insulation Type over the existing Material Type roof.

OR

Apply the Mechanically Attached EPDM Roofing System in conjunction with Insulation Type after tear off of the existing Material Type roof to expose the Deck Type for verification of suitable substrate as specified in this specification. [Tear off materials may be recycled, contact Nationwide Foam, Inc. (888) 820-2760 for details.]

### 1.02 EXTENT OF WORK

- A. Provide all labor, material, tools, equipment, and supervision necessary to complete the installation of a VersiGard Reinforced 45-mil, 60-mil, or 75-mil thick reinforced EPDM membrane Mechanically Attached 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. Sample of the manufacturer’s Total Systems Warranty covering all components of the roofing system.
  - 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 from the membrane manufacturer indicating the fasteners are capable of providing a static backout resistance of 10 inch pounds minimum is required.
  - 5. Certification of the manufacturer’s warranty reserve.
- B. Upon completion of the installed work, submit copies of the manufacturer’s final inspection report 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 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.
  - 2. 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 and underlayment products must be on pallets, off the ground and tightly covered with waterproof materials. Manufacturer’s wrap does not provide sufficient waterproofing. Insulation and underlayment products that become wet or saturated are to be discarded.
- D. Any materials which are found to be damaged shall be removed and replaced at the Contractor’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 PRE-CONSTRUCTION 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 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.
- C. 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 construction 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. [Tear off materials may be recycled, contact Nationwide Foam, Inc. (888) 820-2760 for details.]

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, either by 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 materials 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. Contractors 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.
- D. All field seams and flashing details are to be completed according to manufacturer's specifications and details by the end of each work day.

## 1.13 QUALITY ASSURANCE

- A. The VersiGard Reinforced Roofing System must achieve a UL Class [A, B or C](#).
- B. [\(choose the appropriate paragraph and delete remainder\)](#)

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

International Building Code (IBC) and American Society of Civil Engineers (ASCE 7)  
ANSI/SPRI WD-1 "Wind Design Standard Practice for Roofing Assemblies"

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

(For projects insured by Factory Mutual, use the section below)

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.

- C. The membrane must be manufactured by the material supplier. Manufacturer's supplying membrane made by others are not acceptable.
- D. Unless otherwise noted in this specification, the roofing contractor must strictly comply with the manufacturer's current specifications and details.
- E. The manufacturer must have a minimum of 20 years experience in the manufacturing of vulcanized thermal set sheeting.

**OR**

The manufacturer shall have domestic manufacturing experience commensurate with the term of warranty coverage of the products supplied.

- F. The roofing system must be installed by an Contractor authorized and trained by the manufacturer in compliance with shop drawings as approved by the manufacturer. The roofing Contractor shall be thoroughly experienced and upon request be able to provide evidence of having at least **five (5)** years successful experience installing single-ply EPDM roofing systems and having installed at least **one (1)** EPDM roofing application or several similar systems of equal or greater size within one year.

**AND**

The Contractor shall, upon request, be able to document three (3) installations completed more than two years prior to issuance of the contract documents, utilizing components of the proposed manufacturer, that are comparable to those required for the work and similar in scope and complexity. Provide complete contact information, warranty history for previous installations and demonstrate in-service performance.

- G. 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 experienced superintendent on the job at all times roofing work is in progress.
- H. 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 a written certification on the manufacturer's letterhead and presented for the specifier's consideration.
- I. Upon completion of the installation, the Contractor 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.
- J. Inspector shall be employed and trained by the manufacturer and have received product-specific training from the manufacturer of the products.
- K. The VersiGard EPDM Membrane exceeds 35,320 kJ/m<sup>2</sup> under Xenon-Arc UV Light testing used for testing "Resistance to Outdoor (Ultraviolet) Weathering." (ASTM D 4637 Specification requires a 7560 kJ/m<sup>2</sup> minimum total radiant exposure at 70 W/m<sup>2</sup> irradiance at 176°F black panel temperature to pass.)The membrane shows no visible signs of cracking or crazing.
- L. VersiGard EPDM Membranes achieves a zero (no growth) rating in the ASTM G21 test for fungi growth.

## 1.14 JOB CONDITIONS, CAUTIONS AND WARNINGS

Refer to Versico's VersiGard Roofing System specification for General Job Site Considerations.

- A. Safety Data Sheets (SDS) must be on location at all times during the transportation, storage and application of materials.
- B. 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.
- C. 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.
- D. 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.
- E. 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.
- F. 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.
- G. 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.
- H. New roofing shall be complete and weathertight at the end of the work day.
- I. Contaminants such as grease, fats and oils shall not be allowed to come in direct contact with the roofing membrane. An overlay of Epichlorhydrin membrane must be adhered around units which have the potential to emit solvents, grease or oil.

## 1.15 WARRANTY

- A. 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, 72, 80, 90 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 20 year and/or wind coverage specified greater than 72 mph, additional design enhancements are required. Refer to Versico published VersiGard Reinforced Specifications

Note:

Warranty Length	Minimum Membrane Thickness
10 or 15 year	45-mil VersiGard Reinforced
20 year	60-mil VersiGard Reinforced
25 or 30 year	75-mil VersiGard Reinforced

(After selecting a warranty duration from the above table delete all conditions below which do not apply)

- B. Warranty shall also cover leaks caused by accidental punctures:
  - 1. 8 man-hours per year for 45-mil VersiGard Reinforced
  - 2. 16 man-hours per year for 60-mil VersiGard Reinforced
  - 3. 32 man-hours per year for 75-mil VersiGard Reinforced

- C. Warranty shall also cover leaks caused by hail:
  - 1. Hail up to 1” or 2” diameter hail when 75-mil VersiGard Reinforced is installed over Versico Securshield HD, Dens Deck Prime, or Securock.
  - 2. Hail up to 1” diameter hail when 60-mil VersiGard Reinforced is installed over Versico Securshield HD, Dens Deck Prime, or Securock.
- D. Pro-rated System Warranties shall not be accepted.
- E. Evidence of the manufacturer's warranty reserve shall be included as part of the project submittals for the specifier's approval.

## **PART 2 PRODUCTS**

### **2.01 GENERAL**

- A. All components of the specified roofing system shall be products of Versico or accepted by Versico as compatible.
- B. Unless otherwise approved by the specifier and accepted by the membrane manufacturer, all products (including insulation, fasteners, fastening plates and edgings) must be **manufactured and supplied** by the roofing system manufacturer and covered by the warranty.

**AND**

Manufacturer of roof membrane shall also manufacture all polymeric components for the roofing system, including, but limited to, membrane, adhesives, primers, flashings, caulks and tapes.

### **2.02 MEMBRANE**

Furnish VersiGard Reinforced 45-mil, 60-mil, or 75-mil thick reinforced EPDM (Ethylene, Propylene, Diene Terpolymer) conforming to the minimum physical properties of ASTM D4637. The membrane shall be manufactured in a single panel with no factory splices to reduce splice intersections with 3” or 6” factory applied QA Seam Tape (VersiGard QAT). Membrane sheets in rolls 6.5’, 8’ or 10’ wide by 100’ long.

### **2.03 INSULATION/UNDERLAYMENT**

- A. When applicable, insulation shall be installed in multiple layers. The first and second layer of insulation shall be mechanically fastened to the substrate in accordance with the manufacturer’s published specifications.
- B. Insulation shall be Type of Insulation as supplied by Versico. Minimum R-value required is Note R-Value. (Note: The insulation must meet ASHRAE 90.1 minimums per IBC-International Building Code.)

(choose the appropriate paragraph and delete remainder)

- 1. **Versico Versico 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.
- 2. **Versico SecurShield Polyisocyanurate**– A foam core insulation board covered on both sides with a coated 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 Versicore MP-H NH Polyisocyanurate** – 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. This product contains zero halogenated flame retardants and is Living Building Challenge (LBC) "Red List Free".

4. **Versico SecurShield HD Composite** – Composite insulation panel comprised of ½-inch high-density Polyiso cover board 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 SecurShield HD** – a rigid insulation panel composed of a high-density, 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.
7. **Versico SecurShield HD FR** - Designed for direct application to combustible decks, this 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. Achieves a UL 790 Class A combustible deck assembly rating without the need for fire-rated slip sheets or thermal barrier products. Available 1/2" thick 4' x 8' panel weight 11 lbs with an R-value of 2.5.
8. **Versico SecurShield HD Plus** - a rigid insulation panel composed of a high-density (109 psi max), closed-cell polyisocyanurate foam core laminated to premium-performance 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. Meets an FM 1-90 using only 8 fasteners per 4' x 8' board.
9. **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 Versico HP Recovery Board, Dens-Deck Prime or Securock.
10. **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 Versico HP Recovery Board, Dens-Deck Prime or Securock.
11. **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 Versico HP Recovery Board, Dens-Deck Prime or Securock.
12. **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 Versico HP Recovery Board, Dens-Deck Prime or Securock.
13. **InsulFoam HD Composite** – InsulFoam expanded polystyrene (EPS) insulation laminated with a top surface of 1/2" thick SecurShield HD. Available in 4' x 8' boards with thickness from 1-1/2" to 7".
14. **InsulLam** – InsulFoam expanded polystyrene (EPS) insulation laminated with a top surface of 1/2" Dens Deck Prime, 1/2" Securock, or 1/2" HP Recovery Board. Available in 4' x 8' boards with thickness from 1-1/2" to 7".
15. **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.
16. **Dens Deck Prime** –gypsum core that incorporates glass-mat facings on the top and bottom side.



Available in ¼” to 5/8” and 4’ x 4’ or 4’ x 8’ size boards.

17. **DuraStorm VSH Cover Board** – an engineered composite building material made from a proprietary blend of plastic and cellulose fiber sourced from post-industrial and post-consumer waste streams. DuraStorm VSH is a durable, extremely moisture and mold resistant building material with a core that does not disintegrate or delaminate in the presence of water. Available in 1/2” thick and 4’ x 8’ size board.
18. **R-Tech FanFold Recover Board** – Closed-cell lightweight expanded polystyrene (EPS) with polymeric laminated faces which meets ASTM C 578 for use as a recover board. Metallic side compatible with EPDM mechanically attached system. Available in thicknesses of 3/8” to ¾” with coverage 4’ x 50’ (2 squares). 4’ x 8’ units are also available.

## 2.04 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)

- A. **G200SA Substrate Adhesive:** A high-strength, yellow colored, synthetic rubber adhesive used for bonding VersiGard EPDM membranes to various surfaces. Available in 5 gallon pails.
- B. **EPDM x-23 Low-VOC Bonding Adhesive:** A Low-VOC (volatile organic compound) bonding adhesive (less than 250 grams/liter) used for bonding Sure-Seal/Sure-White EPDM membranes to various surfaces. Adhesive is available in 5 gallon pails.
- C. **Low VOC Bonding Adhesive:** A low VOC (volatile organic compound) bonding adhesive (less than 250 grams/liter) used for bonding VersiGard EPDM membranes to various surfaces. This product meets the <250 gpl VOC (volatile organic compound) content requirements of the OTC Model Rule for Single Ply Roofing Adhesives. Available in 5 gallon pails.
- D. **Low VOC Bonding Adhesive 1168:** A low VOC (volatile organic compound) bonding adhesive that has < 250 gpl and is designed to comply with the regulations of the South Coast Air Quality Management District’s Rule 1168. See Versico’s Product Data Sheet for a listing of the counties involved. The high strength, solvent-based contact adhesive allows bonding of EPDM membrane to various porous and non-porous substrates. Apply at a rate of 60 ft<sup>2</sup> per gallon finished surface. Available in 5-gallon cans.
- E. **Solvent-Free Bonding Adhesive:** A solvent free, odor free, non-flammable, low VOC Bonding Adhesive used to adhere non-reinforced EPDM to multiple substrates. This one-sided application adhesive requires adhesive to be applied to substrate only, when slopes are less than 1”, slopes greater than 1” or vertical substrates may require 2-sided application. When the solvent-free adhesive use is to be specified, authorized Contractors must review applicable product installation information listed on the appropriate Product Data Sheet.
- F. **Aqua Base 120 Bonding Adhesive:** (for use in areas where volatile organic compound, VOC, regulations are in effect): A two (2) sided application, water based contact adhesive for bonding VersiGard (Black or White) EPDM membrane to various surfaces. Complies with the South Coast Air Quality Management District Rule 1168.
- G. **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.
- H. **VersiGard Quick Applied Seam Tape (Factory Applied):** A 3" or 6" wide (used for Mechanically Attached Roofing Systems and 20-year Warranty Systems) by 100' long splice tape used for splicing adjoining sections of EPDM membrane. Complies with the South Coast Air Quality Management District Rule 1168.
- I. **EPDM Primer:** A solvent-based primer used to prepare the surface of EPDM membrane for application of Splice Tape or Quick Applied products. This Primer can also be used in conjunction with EP-95 Splicing Cement in lieu of Splice Cleaner. Available in 1 gallon pails.

- J. **Low VOC EPDM Primer** - A low VOC (volatile organic compound) primer (less than 250 grams/liter) for use with Quick Applied Seam Tape or Quick Applied products. Available in 1 gallon pails.
- K. **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.
- L. **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.
- M. **Pourable Sealer:** A black, two-component, solvent-free, polyurethane based product used for tie-ins and as a sealant around hard-to-flash membrane penetrating objects such as clusters of pipes and for a daily seal when the completion of flashings and terminations cannot be completed by the end of each work day.
- N. **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.
- O. **Universal Single-Ply Sealant** A one-part polyether, non-sagging sealant designed for sealing expansion joints, control joints and counterflashings. Available in white only.

(choose the appropriate Primer and delete remainder)

- P. **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., Dens-Deck 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.
- Q. **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, Dens-Deck Prime and Securock). 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.
- R. **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 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 lb cylinder and 4,000-5,000 sq. ft. per 85 lb cylinder as a primer, in a single-sided application and 750 sq. ft. per 40 lb cylinder and 1,500 sq. ft. per 85 lb cylinder as an adhesive for vertical walls, in a double-sided application.

## 2.05 FASTENERS AND PLATES

To be used for mechanical attachment of insulation and to provide additional membrane securement: **(delete the fastener and insulation plate types which will not be used)**

- A. **HPV Fasteners:** a threaded, #14 fastener with a #3 phillips drive used with steel and wood roof decks.
- B. **HPVX Fasteners:** A heavy duty #15 threaded fastener with a #3 phillips drive used for membranre or insulation securement into steel, wood plank or minimum 15/32 inch thick plywood when increased pullout resistance is desired.
- C. **HPV-XL Fastener:** an oversized diameter (.315) steel threaded fastener with a #3 phillips drive used in conjunction with HP-Xtra Polymer Plates for membrane securemt into steel or wood decks.
- D. **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.

- E. **InsulTite Fasteners:** A threaded #12 fastener with #3 phillips drive used for insulation attachment into steel or wood decks.
- F. **MP 14-10 Fasteners:** A #14 threaded fastener with a #3 phillips drive used for minimum 3,000 psi concrete decks.
- G. **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.
- H. **Purlin Fasteners:** Specifically designed for use with Versico’s Metal Retrofit Roofing System to secure membrane and RUSS to structural steel purlins. The self drilling point can penetrate 12-18 gauge steel with superior pullout resistance.
- I. **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.
- J. **Insulation Fastening Plates:** a nominal 3 inch diameter plastic or metal plate used for insulation attachment.
- K. **Seam Fastening Plate:** a 2” diameter metal fastening plate used in conjunction with RUSS or EPDM membrane for membrane securement into wood or structural concrete decks. May also be used for insulation attachment.
- L. **Polymer Seam Plate:** a 2” diameter plastic fastening plate incorporating barbs on the underside of the plate. This plate is required for membrane and RUSS attachment installed in conjunction with steel roof decks. May also be used for insulation attachment.
- M. **HPV-XL Polymer Seam Plate:** a 2-3/8” diameter plastic fastening plate that incorporates barbs on the underside of the plate. The larger size of the plate enables a wider fastening pattern than smaller plates, while maintaining high pullout resistance. The plate can be used for membrane attachment in conjunction with the HP-Xtra Fastener for use with 22 gauge steel roof decks.
- N. **VersiGard Quick Applied RTS (Reinforced Termination Strip):** a 6” or 9” wide, nominal 45-mil thick clean, cured black reinforced EPDM membrane with 3” wide factory applied tape laminated along one edge for the 6” wide RTS and along both edges for the 9” wide RTS.
  - 1. **6” wide Quick Applied RTS** is used horizontally or vertically at the base of walls, curbs, etc., in conjunction with 2” diameter Fastening Plates below the EPDM deck membrane for additional membrane securement (Polymer Seam Plates are required for steel decks).
  - 2. **9” wide Quick Applied RTS** is for perimeter membrane securement.

## 2.06 METAL EDGING AND MEMBRANE TERMINATIONS

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

- A. **General:** All metal edging s shall be tested and meet ANSI/SPRI ES-1 standards and comply with International Building Code. All metal work is to be supplied and warranted by the manufacturer.

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

### **B. (OMG Supplied -Remove name after selection)**

- a. **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.

- b. **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.

**C. (Metal Era Supplied – Remove name after selection)**

1. **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.
2. **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.

**D. (Metal Era Supplied – Remove name after selection)( NO FM Rating Available)**

1. **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.
2. **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.

E. **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.

F. **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.

G. **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.

H. **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.

## 2.07 WALKWAYS

Protective surfacing for roof traffic shall be Versico Quick Applied Walkway Pads (with factory applied tape on the underside of the walkway) adhered to the membrane surface in conjunction with Versico EPDM Primer.

## 2.08 OTHER MATERIALS

A. **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.

- B. **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).
- C. (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, jobsite 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**

#### **A. 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.

- B. 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.
- C. 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.
- D. 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.
- E. If insulation is to be adhered to the vapor retarder with DASH or 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 725TR Air and Vapor Barrier), and spray or roller applied butyl coatings. Installation requirements for Versico's 725TR Air and Vapor Barrier are identified in Versico published specification.
- F. **VapAir Seal 725TR Installation:**
  - 1. **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, laitance and form release agents. In the event of rain, concrete must be allowed to dry before primer is applied.
  - 2. **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.

3. **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 least 2-1/2". End laps shall be staggered. Place membrane carefully so as to avoid wrinkles and fishmouths. Immediately after installation, roll with a 100-150 pound weighted steel roller.
  4. **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 DASH or Flexible DASH Adhesive in accordance with this Versico Specification.
- G. 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 on vertical wall surfaces, such as structural concrete, gypsum, Securock, DensDeck Prime and plywood substrates.

H. **VapAir Seal MD Installation:**

1. **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.
2. **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.
3. **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 least 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.

**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 in accordance with this Versico Specification.

### 3.03 INSULATION PLACEMENT AND ATTACHMENT

- A. Install insulation or membrane underlayment over the substrate with boards butted tightly together with no joints or gaps greater than 1/4 inch. Stagger joints both horizontally and vertically if multiple layers are provided.
- B. Secure insulation to the substrate with the required mechanical fasteners in accordance with the manufacturer's specifications.

### 3.04 MEMBRANE PLACEMENT AND ATTACHMENT

- A. Unroll and position membrane without stretching. Allow the membrane to relax for approximately 1/2 hour prior to attachment. Provide and secure both perimeter and field membrane sheets in accordance with the manufacturer's most current specifications and details.
- B. Secure the membrane (along the pre-printed blue line approximately 3" from the edge of the membrane sheet) with the required Versico Fastener and Versico securement plate or bar spaced a maximum of 12" on center.

The minimum distance between the edge of the fastening plate and the edge of the membrane must be 2 inches.

- C. Install adjoining membrane sheets in the same manner in accordance with the manufacturer's specifications.

### **3.05 MEMBRANE SPLICING**

- A. Tape splices where fastening plates are located (along the length of the membrane) must utilize 6" wide factory applied seam tape (VersiGard QAT). Tape splices at end roll sections (along the width of the membrane without fastening plates) shall utilize 3" wide Quick Applied Seam Tape.
- B. Overlap adjacent sheets and mark a line approximately 1/4" to 1/2" from the top sheet edge.
- C. Apply EPDM Primer or Low VOC EPDM Primer to splice area.
- D. When adhering factory applied tape (VersiGard QAT), pull the poly backing from QAT beneath the top sheet and allow the top sheet to fall freely onto the exposed primed surface. Press top sheet on to the bottom sheet using firm even hand pressure across the splice towards the splice edge.
- E. For end laps, apply 3" or 6" Quick Applied Seam Tape to the primed membrane surface in accordance with the manufacturer's specifications. Remove the poly backing and roll the top sheet onto the mating surface.
- F. Immediately roll the splice using positive pressure when using a 2" wide steel roller. Roll across the splice edge, not parallel to it. When using VersiGard QAT, Versico's Stand-Up Seam Roller can be used to roll parallel to the splice edge.
- G. **At all field splice intersections**, apply Lap Sealant along the edge of the membrane splice to cover the exposed Quick Applied Seam Tape 2" in each direction from the splice intersection. Install Versico's Quick Applied "T" Joint Covers or a 6" wide section (with rounded corners) of Versico Quick Applied Uncured Flashing over the field splice intersection.

### **3.06 FLASHING**

- A. Wall and curb flashing shall be cured EPDM membrane. Continue the deck membrane as wall flashing where practicable. Use Quick Applied Curb Wrap when possible to flash curb units.
- B. Follow manufacturer's typical flashing procedures for all wall, curb, and penetration flashing including metal edging/coping and roof drain applications.

### **3.07 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 EPDM membrane in accordance with the manufacturer's specifications.

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

### **3.08 DAILY SEAL**

- A. 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.

Note: A temporary seal should be performed at the conclusion of daily work and use of the appropriate method will vary based on project and project conditions. Contact Versico for various methods that may be utilized.

### **3.09 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 Contractor 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**