



## **Senergy Senershield-VB Air/Water-Resistive Barrier Section** **07 25 00 / 07 26 13 / 07 27 26**

*Fluid-applied membrane air/water resistive barrier and Class I vapor retarder*

### **INTRODUCTION**

This specification has been assembled to enable the design professional to select or delete sections to suit the project requirements and is intended to be used in conjunction with Senergy® product bulletins, technical bulletins, etc.

### **DESIGN RESPONSIBILITY**

It is the responsibility of both the specifier and the purchaser to determine if a product is suitable for its intended use. The designer selected by the purchaser shall be responsible for all decisions pertaining to design, detail, structural capability, attachment details, shop drawings and the like. The Senergy® brand of Sika Corporation (herein referred to as "Sika") has prepared guidelines in the form of specifications, typical application details, and product bulletins to facilitate the design process only. Sika is not liable for any errors or omissions in design, detail, structural capability, attachment details, shop drawings or the like, whether based upon the information provided by Sika or otherwise, or for any changes which the purchasers, specifiers, designers or their appointed representatives may make Sika published comments.

### **Designing and detailing a wall system utilizing Senergy Senershield-VB air/water-resistive barrier**

General: The Senergy Senershield-VB shall be installed in strict accordance with current recommended application procedures and product specifications from the system's manufacturer.

#### **A. Substrate Systems**

1. Acceptable substrates are: PermaBase® Cement Board and other cement-boards conforming with ASTM C1325 (Type A-exterior); poured concrete/unit masonry; ASTM C1177 type sheathings, including, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing DensElement (sheathing only); gypsum sheathing (ASTM C79/C1396); Huber Zip (sheathing only) Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB.
2. Surfaces of acceptable substrates shall receive an application of Senershield-VB not less than 26 wet mils thick achieving a void and pinhole free application. The application of multiple coats may be required.
3. The substrate systems shall be engineered with regard to structural performance by others.

#### **B. Moisture Control**

1. Prevent the accumulation of water behind the exterior cladding system, either by condensation or leakage through the wall construction, in the design and detailing of the wall assembly.
  - a. Provide flashing to direct water to the exterior where it is likely to penetrate components in the wall assembly, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall and anywhere else required by local code.
  - b. Air Leakage Prevention: provide continuity of air barrier system at foundation, roof, windows, doors and other penetrations through the system with connecting and compatible air barrier components to minimize condensation and leakage caused by air movement.
  - c. Vapor Diffusion and Condensation: perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness/location and/or other wall assembly components accordingly to minimize the risk of condensation.
  - d. In general, avoid the use of vapor retarders on the interior side of the wall in warm, humid climates. The selection use and placement of vapor barriers within a wall assembly is the sole responsibility of the design professional.

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**C. Grade Condition:** Senergy Senersshield-VB is not intended for use below grade or on surfaces subject to continuous or intermittent immersion in water or hydrostatic pressure.

**D. Coordination with other trades**

1. Evaluate adjacent materials such as windows, doors, etc. for conformance to manufacturer's details. Adjacent trades shall provide scaled shop drawings for review.
2. Air Seals at any joints/gaps between adjoining components (penetrations, etc.) are of primary importance to maintain continuity of an air barrier system and must be considered by the design professional in the overall wall assembly design. Install air seals between the primary air/water-resistive barrier and other wall components (penetrations, etc.) in order to maintain continuity of an air barrier system.
3. Provide protection of rough openings in accordance with Senergy typical details for Senersshield-VB before installing windows, doors, and other penetrations through the wall.

### TECHNICAL INFORMATION

Consult Sika' Facades Technical Services Department for specific recommendations concerning all other applications. Consult the Senergy website, <https://usa.sika.com/senergy>, for additional information about products, systems and for updated literature.

### PART 1 – GENERAL

**NOTE TO SPECIFIER:** Items in blue/underlined indicate a system option or choice of options. Throughout the specification, delete those which are not required or utilized.

#### 1.01 SECTION INCLUDES

- A. Refer to all drawings and other sections of this specification to determine the type and extent of work therein affecting the work of this section, whether or not such work is specifically mentioned herein.
- B. Senergy Senersshield-VB: Ready mixed flexible, fluid applied, vapor permeable, and air/water resistive barrier for use behind most exterior wall claddings.
- C. Senergy products are listed in this specification to establish a standard of quality. Any substitutions to this specification shall be submitted to and receive approval from the Architect at least 10 days before bidding. Proof of equality shall be borne by the submitter.
- A. The air/water-resistive barrier material shall be Senergy Senersshield-VB as manufactured by Sika Corporation, Lyndhurst, NJ.

#### 1.02 RELATED SECTIONS

- A. Section 03 00 00 Concrete substrate
- B. Section 04 00 00 Masonry substrate
- C. Section 05 40 00 Cold-formed metal framing
- D. Section 06 16 00 Sheathing
- E. Section 06 11 00 Wood framing
- F. Section 07 27 00 Air barriers
- G. Section 07 62 00 Sheet Metal Flashing and Trim
- H. Section 07 65 00 Flexible flashing
- I. Section 07 90 00 Joint protection
- J. Section 08 00 00 Openings
- K. Section 08 50 00 Windows
- L. Section 09 22 16 Non-structural metal framing
- M. Section 09 29 00 Gypsum board

#### 1.03 DEFINITIONS

- A. Air Barrier Assembly: The collection of air barrier materials and auxiliary materials applied to an opaque wall, including joints and junctions to abutting construction, to control air movement through the wall.
- B. Water-Resistive Barrier Assembly: The collection of water-resistive materials and accessories that direct incidental water that may pass the primary rainscreen, or condense within the drain plane, out of the wall cladding while providing protection for underlying sheathing materials.

## **Senersshield-VB Air/Water-Resistive Barrier**

### **1.04 SUBMITTALS**

- A. Submit under provisions of Section [01 33 00]
- B. Product Data: Provide data on Senergy Senersshield-VB air/water resistive barrier, product characteristics, performance criteria and limitations.
- C. Code Compliance: Provide manufacturer's applicable code compliant test results.
- D. Certificate: System manufacturer's approval of applicator.
- E. Sealant: Sealant manufacturer's certificate of compliance with ASTM C1382.
- F. System manufacturer's current specifications, typical details and related product literature which indicate preparation required storage, installation techniques and jointing requirements.

### **1.05 PERFORMANCE REQUIREMENTS**

- A. General: Air barrier shall be capable of performing as a continuous vapor retarder air barrier and as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. At wall cladding transitions, the air/water-resistive barrier shall form a continuous air barrier and shall make provision for water drainage, either by creation of an unobstructed drainage plane that extends across the cladding transition or by flashing to discharge to the exterior at the transition. Air barrier assemblies shall be capable of accommodating substrate movement and sealing substrate expansion and control joints, construction material changes and transitions at perimeter conditions without deterioration and air leakage exceeding specified limits or interruption of the drainage plane.
- B. Commonwealth of Massachusetts Building Code Requirements: The intent of this specification is to require compliance with 780 CMR 13, Section 1304.3 Air Leakage.
  - 1. 1304.3.1 Air Barriers: The building envelope shall be designed and constructed with a continuous air barrier to control air leakage into, or out of the conditioned space. An air barrier shall also be provided for interior partitions between conditioned space and space designed to maintain temperature or humidity levels which differ from those in the conditioned space by more than 50% of the difference between the conditioned space and design ambient conditions. The air barrier shall have the following characteristics:
    - a. It must be continuous, with all joints made airtight.
    - b. It shall have an air permeability not to exceed 0.004 cfm/sq. ft. under a pressure differential of 0.3 in. water. (1.57 psf.) (equal to 0.02L/sq. m @ 75 Pa.).
    - c. It shall be capable of withstanding positive and negative combined design wind, fan and stack pressures on the envelope without damage or displacement and shall transfer the load to the structure. It shall not displace adjacent materials under full load.
    - d. It shall be durable or maintainable.
    - e. The air barrier shall be joined in an airtight and flexible manner to the air barrier material of adjacent systems, allowing for the relative movement of systems due to thermal and moisture variations and creep. Connection shall be made between:
      - i. Foundation and walls.
      - ii. Walls and windows or doors.
      - iii. Different wall systems.
      - iv. Wall and roof.
      - v. Wall and roof over unconditioned space.
      - vi. Walls, floor and roof across construction, control and expansion joints.
      - vii. Walls, floors and roof to utility, pipe and duct penetrations.
    - f. All penetrations of the air/water resistive barrier and paths of air infiltration/exfiltration shall be made airtight.

## Senersshield-VB Air/Water-Resistive Barrier

### C. Testing:

#### 1. General Air/Water-Resistive Barrier Minimum Performance:

| TEST  | METHOD                | CRITERIA   | RESULTS   |
|---|-----------------------|--|---|
| Air Leakage of Air Barrier Assemblies       | ASTM E2357            | 0.2 l/(s.m <sup>2</sup> ) @75 Pa<br>(0.04 cfm/ft <sup>2</sup> @ 1.57 psf)  | 0.0055 l/s.m <sup>2</sup> (0.0011 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) positive / post conditioning<br>0.0001 l/s.m <sup>2</sup> (0.00001 cfm/ft <sup>2</sup> ) @ 75 Pa (1.57 psf) negative / post conditioning |
| Air Permeance of Building Materials         | ASTM E2178            | 0.02 l/(s.m <sup>2</sup> ) @75 Pa<br>(0.004 cfm/ft <sup>2</sup> @ 1.57 psf)  | 0.0001 l/s.m <sup>2</sup> @ 75 Pa<br>(0.00009 cfm/ft <sup>2</sup> @ 1.57 psf)   |
| Rate of Air Leakage                         | ASTM E283             |  | 0.0185 l/s.m <sup>2</sup> @ 75 Pa (0.0037 cfm/ft <sup>2</sup> @ 1.57 psf)   |
| Water Vapor Transmission                    | ASTM E96              | Report value   | 0.09 Perms (grains/Hr. in Hg. ft <sup>2</sup> ) @ 26 mils wet film thickness  |
| Pull-Off Strength of Coatings               | ASTM D4541            | Min. 110 kPa (15.9 psi) or substrate failure   | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood; pvc and galvanized flashing   |
| Nail Sealability (without Sheathing Fabric) | ASTM D1970            | No water penetration at galvanized roofing nail penetration under 127 mm (5") head of water after 3 days at 4° C (40° F) | Pass  |
| Surface Burning                             | ASTM E84              | Flame Spread < 25<br>Smoke Development < 450   | Meets Class A: Flame spread <25<br>Smoke developed >450   |
| Radiant Heat & Multi-Story Tests            | NFPA 268 & NFPA 285   | No increase in fire hazard   | Pass using many wall designs; including Senergy EIFS cladding with 12" EPS insulation. Reference technical bulletin NFPA 285 Compliant Wall Systems and Assemblies  |
| Water Resistive Barrier under EIFS          | ASTM E2570            | Meets all criteria in the standard   | Pass  |
| Compound Stability (Elevated Temperature)   | ASTM D5147 Section 15 |  | No flowing, dripping, or drop formation up to 177° C (350° F)   |
| Fire Resistance                             | ASTM E119/UL 263      | Maintain fire resistance of existing rated assembly  | Will not add or detract from the rating of a fire resistive wall assembly   |
| Drainage Efficiency                         | ASTM E 2273           |  | 99%   |
| % Solids                                    | Lab method            | Report Value   | 74%   |

#### 2. Senersshield-VB Air/Water-Resistive Barrier ICC-ES AC-212:

| TEST   | METHOD  | CRITERIA  | RESULTS  |
|--|---|---|--|
| Sequential Testing:<br>1. Structural<br>2. Racking<br>3. Restrained Environmental Conditioning<br>4. Water Penetration | 1. ASTM E 1233 Procedure A<br>2. ASTM E 72<br>3. ICC-ES AC-212<br>4. ASTM E 331 | No cracking at joints or interface of flashing<br>No water penetration after 15 min @ 137 Pa (2.86 psf)   | Pass - Tested over OSB and gypsum sheathing<br>No water penetration after 90 min @ 299 Pa (6.24 psf)                                       |
| Sequential Testing:<br>1. UV Light Exposure<br>2. Accelerated Aging<br>3. Hydrostatic Pressure Test                    | 1. ICC-ES AC-212<br>2. ICC-ES AC-212<br>3. AATCC 127-1985                       | No cracking or bond failure to substrate<br>No water penetration after 21.7 in (550 mm) water for 5 hours | Pass   |
| Freeze-Thaw  | ASTM E 2485 (Method B)  | No sign of deleterious effects after 10 cycles  | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood                                   |
| Water Resistance   | ASTM D2247  | No deleterious effects after 14-day exposure  | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood                                   |
| Tensile Bond   | ASTM C 297  | Minimum 103 kPa (15 psi)  | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood, CMU; pvc and galvanized flashing |
| Tensile Bond (after freeze-thaw)   | ASTM C 297  | Minimum 103 kPa (15 psi) avg; no failure after 10 cycles freeze-thaw                                      | Pass   |

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### 3. Senersshield-VB Air/Water-Resistance Barrier ICC-ES AC 148:

| TEST  | METHOD  | CRITERIA   | RESULTS  |
|---|---|--|--|
| Sequential Testing:<br>1. UV Light Exposure<br>2. Accelerated Aging<br>3. Hydrostatic Pressure Test | 1. ICC-ES AC 148<br>2. ICC-ES AC 148<br>3. AATCC 127-1985 | No cracking or bond failure to substrate<br>No water penetration after 21.7 in (550 mm) water for 5 hours                      | Pass   |
| Peel Adhesion   | ASTM D 3330 Method F                                      | After UV Exposure<br>After Accelerated Aging<br>After Elevated Temperature Exposure<br>After Water Immersion                   | Pass - tested over ASTM C1177 glass-mat sheathing, OSB, plywood, PVC and uncoated aluminum |
| Nail Sealability after Thermal Cycling  | ASTM D 1970 (Modified), AAMA 711                          | No water penetration at galvanized roofing nail penetration under 31 mm (1.2") head of water after 24 hours at 4° C (40° F)    | Pass   |
| Tensile Strength after UV Exposure  | ASTM D 5034, AAMA 711                                     | Minimum 0.5 N/mm (2.9 lbs./in)   | Pass   |
| Cold Temperature Pliability   | ASTM D 1970, AAMA 711                                     | No cracking after bending around a 25 mm (1") mandrel after 2-hour exposure to -18° C (0° F)                                   | Pass   |
| Resistance to Peeling   | AAMA 711  | No signs of distress or failure after 24 hours of exposure at room temperature, 50° C (122° F), 65° C (149° F), 80° C (176° F) | Pass   |

### 4. SikaWall MaxFlash AAMA 714-15

| TEST                 | METHOD   | CRITERIA   | RESULTS   |
|----------------------|--|--|---|
| Peel Adhesion        | ASTM C794<br>Control AAMA 714 Sec 5.1<br>UV exposure Sec 5.3, ASTM G154<br>Elevated temperature AAMA 714 Sec 5.4<br>Thermal cycling AAMA 714 Sec 5.5<br>7 day water immersion AAMA 714 Sec 5.7 | Tested over ASTM C1177 sheathing, plywood, OSB, concrete (mortar), CMU, galvanized steel, aluminum   | Pass control and after conditioning, min. 5 pli |
| Crack Bridging       | AAMA 714 Sec 5.6, ASTM C1305   | No failure after 10 cycles with 1/8" gap and water holdout of 550 mm (21.7") for 24 hours, tested at 60 mils per ASTM C1305                      | Pass  |
| Nail Sealability     | AAMA 714 Sec 5.2 (AAMA 711 Sec 5.2), modified ASTM D1970 sec 7.9   | No failure before and after thermal cycling, 24 hours at 40°F with 31.75 mm (1 ¼") head of water   | Pass  |
| Accelerated Aging    | AAMA 714 Sec 5.3, ASTM G154, Cycle 1   | No deleterious effects such as wrinkling, distortion, blistering, expansion, shrinkage or warpage after 14 days (336 hours) to Cycle 1 of G154   | Pass  |
| Elevated Temperature | AAMA 714 Sec 5.4   | No deleterious effects such as wrinkling, distortion, blistering, expansion, shrinkage or warpage at 50°C (122°F), 65°C (149°F) and 80°C (176°F) | Pass  |
| Thermal Cycling      | AAMA 714 Sec 5.5   | No deleterious effects such as wrinkling, distortion, blistering, expansion, shrinkage or warpage after 10 cycles                                | Pass  |
| Water Immersion      | AAMA 714 Sec 5.7   | No deleterious effects such as wrinkling, distortion, blistering,  | Pass  |

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|                             |                                     |  |   |
|-----------------------------|-------------------------------------|--|---|
|                             |                                     | expansion, shrinkage or warpage after 7 days               |   |
| Adhesion to Damp Substrates | AAMA 714 Sec 6.1 and 6.2            | Minimum 5 pli, over OSB and mortar (absorptive substrates) | Pass  |
| Water Vapor Permeability    | AAMA 714 Sec 6.3, ASTM E96 Method B | 0.2 l/(s.m2) @75 Pa<br>(0.04 cfm/ft2 @ 1.57 psf)           | 19.9 perms @ 12 mils<br>7.2 perms @ 30 mils |

**Note:** all testing with MaxFlash at 12 mils unless otherwise noted

### 5. SikaWall MaxFlash ICC-ES AC-212

| TEST   | METHOD  | CRITERIA   | RESULTS  |
|--|---|--|--|
| Sequential Testing:<br>1. Structural<br>2. Racking<br>3. Restrained Environmental Conditioning<br>4. Water Penetration | AC-212 Sec 4.2<br>1. ASTM E 1233<br>2. ASTM E 72<br>3. AC-212 Sec. 4.7.3<br>4. ASTM E 331 | No cracking at joints or interface of flashing<br>No water penetration after 15 min @ 137 Pa (2.86 psf)  | Pass - Tested over OSB and gypsum sheathing<br>No water penetration after 90 min @ 299 Pa (6.24 psf) or 575 Pa (12psf)                     |
| Weather Testing Sequential:<br>1. UV Light Exposure<br>2. Accelerated Aging<br>3. Hydrostatic Pressure Test            | AC-212 Sec 4.8<br>1. AC-212 Sec. 4.8.1<br>2. AC-212 Sec 4.82.2<br>3. AATCC 127            | No cracking or bond failure after 210 hrs.<br>No cracking or bond failure after 25 cycles<br>No water penetration under 550 mm (21.7") head of water | Pass   |
| Freeze-Thaw  | AC-212 Sec. 4.2   | 10 cycles, no deleterious effects such as cracking, checking, crazing or erosion, viewed at 5x magnification   | Pass   |
| Water Resistance   | AC-112 Sec 4.3<br>ASTM D2247  | No deleterious effects after 14-day exposure   | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood                                   |
| Tensile Bond   | ASTM C 297  | Minimum 103 kPa (15 psi)   | Pass - Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood, CMU; pvc and galvanized flashing |
| Tensile Bond   | AC-212 Sec. 4.1<br>ASTM C 297   | Minimum 103 kPa (15 psi) avg; no failure after 10 cycles freeze-thaw   | Pass 105 kPa (15 psi) - Tested over ASTM C1177 sheathing, plywood, OSB, cement board, PVC, aluminum, galvanized steel and stainless steel  |
| Water Vapor Permeability   | AC-212 Sec. 4.4<br>ASTM E96 Method B  | Report Value   | 19.9 perms @ 12 mils<br>7.2 perms @ 30 mils  |
| Water Penetration  | AC-212 Sec, 4.5<br>ASTM E331  | No water penetration at:<br>137 Pa (2.86 psf)<br>299 Pa (6.24 psf)<br>575 Pa (12 psf)  | Pass, testing performed with MaxFlash exposed over sheathing joints.   |
| Air Permiance of Building Materials  | ASTM E2178  | 0.02 l/(s.m2) @75 Pa<br>(0.004 cfm/ft2 @ 1.57 psf)   | 0.00410 L/s-m2 @ 75 Pa<br>(0.00082 cfm/ft2 @ 1.57 psf)<br>Performed on 12 mil thick free film sample                                       |

**Note:** all testing with MaxFlash at 20 mils unless otherwise noted

### 6. SikaWall MaxFlash Minimum Performance:

| TEST                                 | METHOD              | CRITERIA  | RESULTS  |
|--------------------------------------|---------------------|---|--|
| Air Permiance of Building Materials  | ASTM E2178          | 0.02 l/ (s.m2) @75 Pa<br>(0.004 cfm/ft2 @ 1.57 psf)   | 0.00410 L/s-m <sup>2</sup> @ 75 Pa (0.00082 cfm/ft <sup>2</sup> @ 1.57 psf), performed on free film sample   |
| Air Leakage of Air Barrier Materials | ASTM E2357          | 0.2 l/ (s.m2) @75 Pa<br>(0.04 cfm/ft2 @ 1.57 psf)   | 0.0463 L/s-m2 @ 75 Pa (0.00926 cfm/ft2 @ 1.57 psf), tested over C1177 sheathing, sheathing joints and penetration details treated with MaxFlash, no other coating used |
| Nail Sealability                     | ASTM D1970 Sec. 7.9 | No water penetration at galvanized roofing nail penetration under 5" (127mm) head of water after 3 days at 40° F (4° C) | Pass, before and after thermal cycling, 3 days at 40°F with 5" (127mm) head of water   |
| Surface Burning                      | ASTM E84            | Flame Spread < 25<br>Smoke Development < 450  | Class A flame spread <25<br>Class A smoke developed <450<br>Tested at 30 mils  |

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|            |           |              |                 |
|------------|-----------|--------------|-----------------|
| Elongation | ASTM D412 | Report Value | 288% at 20 mils |
|------------|-----------|--------------|-----------------|

### 1.06 QUALITY ASSURANCE

- A. Manufacturer: More than 10 years in the A/WRB industry, with more than 1000 completed projects.
- B. Applicator: Approved by Sika to perform work of this section.
- C. Regulatory Requirements: Conform to applicable code requirements for air/water resistive barriers.
- A. Field Samples
  - 1. Provide under provisions of Section [\[01 43 36\]](#) [\[01 43 39\]](#).
  - 2. Construct one field sample panel for each color and texture, [\[x\]](#) [\[meters\]](#) [\[feet\]](#) in size of system materials illustrating method of attachment, surface finish color and texture.
  - 3. Prepare each sample panel using the same tools and techniques to be used for the actual application.
  - 4. Locate sample panel where directed.
  - 5. Accepted sample panel [\[may\]](#) [\[may not\]](#) remain as part of the work.
  - 6. Field samples shall be comprised of all wall assembly components including substrate, air/water-resistive barrier and supporting accessories.

### 1.07 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store and handle products under provisions of Section [\[01 65 00\]](#) [\[01 66 00\]](#) [ ].
- B. Deliver Senergy Senersshield-VB and associated materials in original unopened packages with manufacturer's labels intact.
- C. Protect Senergy Senersshield-VB and associated materials during transportation and installation to avoid physical damage.
- D. Store Senergy Senersshield-VB in cool, dry place protected from freezing. Store at no less than 4°C/40°F.
- E. Store Senergy Senersshield-VB and associated materials protected from direct sunlight and extreme heat.
- F. Store SikaWall Sheathing Fabric and Flash Seal NP flexible flashing in cool, dry place protected from exposure to moisture.
- G. Store SikaWall MaxFlash at a minimum of 40°F. In cold weather, keep containers at room temperature for at least 24 hours before using.

### 1.08 PROJECT/SITE CONDITIONS

- A. Do not apply Senergy Senersshield-VB in ambient temperatures below 25°F (-4°C). Provide properly vented, supplementary heat during installation and drying period when temperatures less than 25°F (-4°C) prevail.
- B. Cold temperature application less than 40°F (4°C) down to 25°F (-4°C): expect extended dry time. Final air/water-resistive properties and film durability rely on temperatures rising above freezing (32°F/0°C)
- C. Do not apply Senergy Senersshield-VB and associated materials to frozen surfaces.
- D. Drying time: at 40°F (4°C) and rising allow to dry completely, typically 2-10 hours before proceeding with cladding installation. 40°F (4°C) down to 25°F (-4°C): when applied at a 13-mil wet film thickness, typically dry in approximately 12 hours at 32°F (0°C) and 50% relative humidity (RH). When spray applied in a single pass at a 26 mil wet film thickness, typically dry in approximately 18 hours at 32°F (0°C) and 50% RH. Allow to dry completely prior to cladding installation.
- E. Limit exposure of Senergy Senersshield-VB and associated products to a maximum of 180 days.

### 1.09 SEQUENCING AND SCHEDULING

- A. Coordinate and schedule installation of Senergy Senersshield-VB and associated materials with related work of other sections.
- B. Coordinate and schedule installation of flashing and joint sealers to prevent water infiltration behind the exterior cladding system.

## Senersshield-VB Air/Water-Resistive Barrier

### 1.10 WARRANTY

- A. Material Warranty: Provide Sika materials warranty for Senergy Senersshield-VB installations under provisions of Section [01 70 00].
1. Comply with Sika Facades' notification procedures to assure qualification for warranty.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

- A. Senergy Senersshield-VB Air/Water-Resistive Barrier manufactured by Sika Corporation.

### 2.02 MATERIALS

**NOTE TO SPECIFIER:** Items in blue/underlined indicate a system option or choice of options. Throughout the specification, delete those which are not required or utilized. Contact Sika' Technical Service Department for further assistance.

**A. Air/Water Resistive Barrier Components:**

1. Air/Water-Resistive Barrier Coating:
  - a. Senersshield-VB: A one-component fluid-applied vapor retarder air/water-resistive barrier coating.
2. Rough Opening and Joint Treatment: **(Required, Select a, b or both)**
  - a. SikaWall Sheathing Fabric: A spun-bonded non-woven reinforced polyester web for use with Senergy fluid applied air/weather-resistive barriers.
  - b. SikaWall MaxFlash: A one-component elastomeric material for use as a flexible flashing membrane.
3. SikaWall Flash Seal NP Transitional Membrane / Expansion Joint Flashing 32-mil thick, self-sealing, self-healing composite membrane of polyester fabric and butyl adhesive. Compatible with Senergy liquid air/weather-resistant barriers.

### 2.03 ACCESSORIES

- A. Joint Sealant: reference *Acceptable Sealant for use with Senergy Air/Water-Resistive Barriers* Technical Bulletin.

## PART 3 EXECUTION

### 3.01 EXAMINATION

**A. Site Conditions:**

1. Verify project site conditions under provisions of Section [01 00 00].

**B. Walls:**

1. Substrates:
  - a. Roller applied air/water-resistive barrier acceptable substrates: Acceptable substrates are: PermaBase® Cement Board and other cement-boards conforming with ASTM C1325 (Type A-exterior); poured concrete/unit masonry; ASTM C1177 type sheathings, including, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock™ glass-mat sheathing, and DensGlass® exterior sheathing. DensElement (sheathing only); gypsum sheathing (ASTM C79/C1396); Huber Zip (sheathing only); Exposure I or exterior plywood (Grade C/D or better); or Exposure I OSB. Consult the Sika Technical Services Department for all other applications.
  - b. Wall sheathing must be securely fastened per applicable building code and sheathing manufacturer's requirements.
  - c. Examine surfaces to receive Senersshield-VB air/water resistive barrier and verify that substrate and adjacent materials are dry, clean, sound, and free of releasing agents, paint, or other residue or coatings. Verify substrate is flat, free of fins or planar irregularities greater than 6.4 mm in 3 m (1/4" in 10').
  - d. Verify that concrete is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D4263.
  - e. Verify that masonry joints are struck flush and completely filled with mortar.
2. Flashings:
  - a. All flashings are by others and must be installed in accordance with specific manufacturer's requirements. Where appropriate, end-dams must be provided.
  - b. Openings must be flashed prior to window/door, HVAC, etc. installation. Refer to the Senergy



## Senersshield-VB Air/Water-Resistive Barrier

- typical details for Senersshield-VB for further information.
- c. Windows and openings shall be flashed according to design and Building Code Requirements.
- d. Individual windows that are ganged to make multiple units require continuous head flashing and the joints between the units must be fully sealed.
- 3. Roof:
  - a. Verify that all roof flashings have been installed in accordance with the guidelines set by the Asphalt Roofing Manufacturers Association (ARMA).
- 4. Kick-out flashing:
  - a. Kick-out flashing must be installed leak-proof and angled (min 100°) to allow for proper drainage and water diversion.
- C. Do not proceed until all unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. Protect all surrounding areas and surfaces from damage and staining during application of Senergy Senersshield-VB.
- B. Protect finished work at end of each day to prevent water penetration.
- C. Substrate preparation: Prepare substrates in accordance with Senergy instructions and Senersshield-VB product data sheet.

### 3.03 MIXING

General: No additives are permitted unless specified in product mixing instructions. Close containers when not in use. Prepare in a container that is clean and free of foreign substances. Do not use a container which has contained or been cleaned with a petroleum-based product. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

**NOTE TO SPECIFIER: Keep only the products in this section which were selected in Section 2.02. Delete those not to be utilized.**

- A. **Senersshield-VB Air/Water-Resistive Barriers:** Mix with a clean, rust-free paddle and drill until thoroughly blended. Do not add water.

### 3.04 APPLICATION

**NOTE TO SPECIFIER: Keep only the products in this section that were selected in Section 2.02. Delete those not to be utilized.**

#### A. Air/Water Resistive Barrier:

1. Substrate shall be installed per substrate manufacturer's instructions. Substrate shall be dry, clean, sound and free of release agents, paint or other residue or coatings. Verify substrate is flat, free of fins or planar irregularities greater than 6.4 mm in 3 m (1/4" in 10'). Unsatisfactory conditions shall be reported to the general contractor and corrected before application of the air/water-resistive barrier materials.
2. Rough Openings: **(Required, Select a or b)**
  - a. SikaWall Sheathing Fabric: Wrap openings with Sheathing Fabric by applying mixed Senersshield-VB to all surfaces and immediately embedding Sheathing Fabric. If necessary, apply a second coat of Senersshield-VB over the Sheathing Fabric, ensuring a continuous, void- and wrinkle- free membrane application (wet-on-wet spray application is acceptable).
  - b. SikaWall MaxFlash: Apply a bead of MaxFlash in each corner of the rough opening, ensuring that corners are fully sealed. Where wood bucks are used, apply a bead of MaxFlash into gaps between bucks and between the buck and building structure. Apply additional MaxFlash in a zigzag pattern onto head, sill, jambs and exterior substrate. Spread MaxFlash evenly across the rough opening to form a uniform, continuous, void and pinhole-free membrane with a 12-20 mil thickness. Extend MaxFlash membrane minimum 4" onto the exterior wall, maintaining 12-20 mil thickness. Allow MaxFlash to skin before applying fluid-applied air/water-resistive barrier to sheathing. Lap the air/water-resistive barrier a minimum of 2" onto MaxFlash, creating a continuous, monolithic air/water-resistive barrier membrane. Allow MaxFlash to cure prior to the installation of windows, doors and other wall assemblies.
3. Sheathing Joints: **(Required, Select a or b)**
  - a. SikaWall Sheathing Fabric: Spot all fasteners and precoat sheathing joints, terminations, inside

## Senersshield-VB Air/Water-Resistive Barrier

- and outside corners with mixed Senersshield-VB using a 4" (101 mm) wide by 3/4" (20 mm) nap roller, brush or spray. Immediately place and center Sheathing Fabric over wet Senersshield-VB at all sheathing joints, terminations, inside and outside corners, as well as knot holes and check cracks that may exist in plywood or OSB. Ensure the Sheathing Fabric extends evenly on both sides of the sheathing joint. Completely saturate Sheathing Fabric with Senersshield-VB. Lap Sheathing Fabric 2 1/2" (63.5 mm) minimum at intersections. If using roller, brush, or trowel application, allow to dry to the touch before applying Senersshield-VB to the entire wall surface. If spraying, "wet on wet" application is acceptable.
- b. SikaWall MaxFlash: Apply a thick bead of MaxFlash to sheathing joints. Spread MaxFlash evenly a minimum of 1" beyond the joint on either side. Apply 20 mils of MaxFlash across the sheathing joint. Spot fastener heads with MaxFlash or fluid-applied air/water-resistive barrier. Allow MaxFlash to skin before applying fluid-applied air/water-resistive barrier to sheathing.
4. Field of Substrate:
- a. Roller Application: Apply Senersshield-VB with a 3/4" (20 mm) nap roller a consistent, minimum 13 wet mil thickness. Prior to application of the second coat, visually inspect to ensure substrate surface is blister free and coating is free of voids. Repair if needed and then apply a second coat after the initial coating is sufficiently dry.  
**Note: A minimum of two (2) 13-mil wet coats of Senersshield-VB are required over all substrates.**
  - b. Applying with spray equipment, Senersshield-VB may be sprayed to a 26-mil thickness in one wet application. Backrolling with a loaded roller may be needed to produce a pinhole-free film.  
**Note: Refer to Spray Application technical bulletin for spray application equipment and application instructions. Verify thickness using a wet film mil gauge.**
5. Limit the weather exposure of Senersshield-VB to a maximum of 180 days. Verify surfaces are free of dirt, contaminants, or other deleterious conditions before application of cladding. Report and correct any such conditions prior to cladding application. Dry/cure times of adhesively applied EPS insulation board installed over Senersshield-VB may be prolonged, particularly in cool and/or damp weather.

### B. Transition Membrane Installation

- 1. Install Senersshield-VB/ Sheathing Fabric and/or MaxFlash or Flash Seal NP and sealant in accordance with project details & specifications to form a seal with adjacent construction and maintain a continuous air/water-resistive barrier.
  - a. General Contractor shall make provision to coordinate the installation of air barrier with installation of roofing membrane and base flashing to ensure continuity of air barrier with roofing membrane.
  - b. General Contractor shall make provision to install strip on roofing membrane or base flashing so that a minimum of 75 mm (3") of coverage is achieved over both substrates.
- 2. Remove usable size of the release film immediately before application and center the Flash Seal NP over the area to be sealed. Using a wallpaper roller, extension-handled countertop roller or weighted hand roller, firmly roll the Flash Seal NP to the area being sealed. As the Flash Seal NP is applied, pull more of the release film, exposing the adhesive surface, pressing down with a roller and keeping the Flash Seal NP smooth.

### 3.05 CLEANING AND PROTECTION

- A. Protect air barrier system from damage during application and remainder of construction period.
- B. Protect air barrier from exposure to UV light and harmful weather exposure as required by manufacturer.
- C. Clean spills, stains, and soiling from construction that would be exposed in the completed work using cleaning agents and procedures recommended by manufacturer of affected construction.
- D. Remove masking materials after installation.

### END OF SECTION

## Senershiold-VB Air/Water-Resistive Barrier

### WARRANTY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at [usa.sika.com/senergy](http://usa.sika.com/senergy) or by calling SIKA Facades' Technical Service Department at 1-800-589-1336. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs. NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS. Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/>.