Senershield-VB Product Bulletin

A one-component fluid-applied air/water-resistive barrier that can also function as a Class I vapor retarder
**DESCRIPTION**

SENERSHIELD-VB is a one-component fluid-applied air/water-resistive barrier that can also function as a Class I vapor retarder. This water-resistant, resilient membrane may be spray-, roller-, or brush-applied directly to approved above grade wall substrates. It provides excellent secondary moisture protection behind most wall claddings including brick, siding, metal panels, EIFS and stucco. A slipsheet is required for stucco claddings.

**USES**

For use over the following exterior wall substrates:
- Poured concrete/unit masonry, ASTM C1177 type sheathings, including DensGlass™ and DensElement™ exterior sheathing, eXP™ sheathing, GlasRec™ sheathing, Securock™ glass-mat sheathing, Weather Defense™ Platinum sheathing, GreenGlass® sheathing, PermaBase™ cement-board by National Gypsum and other cement-boards (ASTM C1325 Type A Exterior), Untreated Exposure I or exterior plywood sheathing (grade C-D or better), Untreated Exposure I OSB, gypsum sheathing (ASTM C79/ASTM C1396).
- Do not use SENERSHIELD-VB for below-grade applications or on surfaces subject to water immersion.

**COLOR**

Reddish Brown

**COVERAGE**

<table>
<thead>
<tr>
<th>Substrate</th>
<th>Coverage @ 26 MILS WFT</th>
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</thead>
<tbody>
<tr>
<td>Over ASTM C1177 Type Sheathing</td>
<td>27 m² (290 ft²) per pail</td>
</tr>
<tr>
<td>Over Cement Board</td>
<td>27 m² (290 ft²) per pail</td>
</tr>
<tr>
<td>Over Plywood**</td>
<td>24 m² (265 ft²) per pail</td>
</tr>
<tr>
<td>Over Oriented Strand Board (OSB)*</td>
<td>24 m² (265 ft²) per pail</td>
</tr>
<tr>
<td>Over Concrete Masonry Units (CMU)*</td>
<td>7-14 m² (80-150 ft²) varies with CMU porosity per pail</td>
</tr>
<tr>
<td>Over Poured Concrete</td>
<td>27 m² (290 ft²) per pail</td>
</tr>
</tbody>
</table>

**PACKAGING**

- 27.2 kg per 19-liter pail (60 lbs per 5-gallon pail)
- 4" SHEATHING FABRIC: 101.5 mm x 54.8 m (4" x 180 ft) roll
- 6" SHEATHING FABRIC: 152.4 mm x 54.8 m (6" x 180 ft) roll
- 9" SHEATHING FABRIC: 228.5 mm x 54.8 m (9" x 180 ft) roll

* Roll or spray / backroll for optimum coverage rate. Other application methods may provide less coverage. Actual results may vary depending on surface porosity, roughness, moisture uptakes, or other factors.

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**Advantages**

- Meets ASTM E2357 Air Leakage of Building Assemblies requirements specified by the ABAA and listed in ASHRAE 189.1
- Meets requirements of ICC-ES AC 148; can be used as a flexible flashing in rough openings or through-wall penetrations
- Self-sealing; meets ASTM D 1970 Nail Sealability requirements
- Approved for Senergy Wall Systems; full system warranty with Senergy EIFS and stucco wall claddings
- Liquid-applied, continuously-bonded membrane; eliminates seams, lap joints and staples; transmits wind loads directly to the substrate
- One component, water-based, very low VOC content; safe for workers and the environment, low odor, easy application
- Nonflammable as applied; promotes workplace safety
- Spray-, roller- or brush-applied; versatile, applicator-friendly performance
- Compatible with lightweight, low-cost spray equipment; fast, easy, economical application
- No primer required; single pass application on most substrates
- Asphalt and plasticizer-free; easy cleanup, will not dry out or leach plasticizer after application
- 180-day maximum outdoor exposure; can schedule application before cladding installation

**Notes**

1. Based on 2012 IBC definitions
## TEST RESULTS

<table>
<thead>
<tr>
<th>TEST</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Air Leakage of Air Barrier Assemblies</strong>&lt;br&gt;ASTM E 2357</td>
<td>0.0055 L/s·m² (0.0011 cfm/ft²) @ 75 Pa (1.57 psf) positive / post conditioning&lt;br&gt;0.0001 L/s·m² (0.0000 cfm/ft²) @ 75 Pa (1.57 psf) negative / post conditioning</td>
</tr>
<tr>
<td><strong>Air Permeance of Building Materials</strong>&lt;br&gt;ASTM E 2178</td>
<td>0.0001 L/s·m² @ 75 Pa&lt;br&gt;(0.0000 cfm/ft² @ 1.57 psf)</td>
</tr>
<tr>
<td><strong>Rate of Air Leakage</strong>&lt;br&gt;ASTM E 283</td>
<td>0.0185 L/s·m² @ 75 Pa (0.0037 cfm/ft² @ 1.57 psf)</td>
</tr>
<tr>
<td><strong>Water Vapor Transmission</strong>&lt;br&gt;ASTM E 96 Method A</td>
<td>0.09 Perms (grains/Hr. in Hg. ft²) @ 26 mils wet film thickness&lt;br&gt;0.18 Perms (grains/Hr. in Hg. ft²) @ 10 mils wet film thickness</td>
</tr>
<tr>
<td><strong>Pull-Off Strength of Coatings</strong>&lt;br&gt;ASTM D 4541</td>
<td>Pass - Min. 110 kPa (15.9 psi) or substrate failure (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood; pvc and galvanized flashing)</td>
</tr>
<tr>
<td><strong>Nail Sealability (without Sheathing Fabric)</strong>&lt;br&gt;ASTM D 1970</td>
<td>Pass - No water penetration at galvanized roofing nail penetration under 127 mm (5&quot;) head of water after 3 days at 4° C (40° F)</td>
</tr>
<tr>
<td><strong>Surface Burning</strong>&lt;br&gt;ASTM E 84</td>
<td>Class A flame speed &lt;25&lt;br&gt;Class A smoke developed index &lt;450</td>
</tr>
<tr>
<td><strong>Radiant Heat Multi-Story Tests</strong>&lt;br&gt;NFPA 268, NFPA 285</td>
<td>Pass using many wall designs (EIFS cladding with 12” EPS insulation) Engineering analyses available on request</td>
</tr>
<tr>
<td><strong>Water-Resistive Barriers under EIFS</strong>&lt;br&gt;ASTM E 2570</td>
<td>Pass&lt;br&gt;(Meets all criteria in the standard)</td>
</tr>
<tr>
<td><strong>Compound Stability</strong>&lt;br&gt;(Elevated Temperature)&lt;br&gt;ASTM D5147 Section 15</td>
<td>No flowing, dripping, or drop formation up to 177° C (350° F)</td>
</tr>
<tr>
<td><strong>Fire Resistance</strong>&lt;br&gt;ASTM E119/UL 263</td>
<td>Will not add or detract from the rating of a fire resistive wall assembly</td>
</tr>
<tr>
<td><strong>Drainage Efficiency</strong>&lt;br&gt;ASTM E 2273</td>
<td>99%</td>
</tr>
</tbody>
</table>

### ICC-ES AC 212 Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers over Exterior Sheathing

**Sequential Testing - Structural, Racking, Restrained Environmental Conditioning and Water Penetration**

1. **Structural:** ASTM E 1233 Procedure A<br>No cracking at joints or interface of flashing
2. **Racking:** ASTM E 72<br>No cracking at joints or interface of flashing
3. **Restrained Environmental Conditioning:** ICC-ES AC 212<br>No cracking at joints or interface of flashing
4. **Water Penetration:** ASTM E 331<br>No water penetration after 90 min @ 299 Pa (6.24 psf)<br>Tested over OSB and gypsum sheathing

### ICC-ES AC 212 Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers over Exterior Sheathing

**Sequential Testing - Weathering**

1. **UV Light Exposure:** ICC-ES AC 212<br>No cracking or bond failure to substrate
2. **Accelerated Aging:** ICC-ES AC 212<br>No cracking or bond failure to substrate
3. **Hydrostatic Pressure Test:**<br>AATCC 127-1985<br>No water penetration at 55 cm (21.7") column of water for 5 hours
## TEST RESULTS

### ICC-ES AC 212 (Continued from previous page)

<table>
<thead>
<tr>
<th>Test</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Freeze-Thaw</strong></td>
<td><em>ASTM E 2485 (Method B)</em> No sign of deleterious effects after 10 cycles (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood)</td>
</tr>
<tr>
<td><strong>Water Resistance</strong></td>
<td><em>ASTM D 2247</em> No sign of deleterious effects after 14 day exposure (Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood)</td>
</tr>
<tr>
<td><strong>Tensile Bond</strong></td>
<td><em>ASTM C 297</em> &gt;103 kPa (15 psi) Tested over exterior gypsum sheathing, ASTM C1177 glass-mat sheathing, cement board, OSB, plywood, CMU, pvc and galvanized flashing</td>
</tr>
<tr>
<td><strong>Tensile Bond</strong> (before &amp; after freeze-thaw)</td>
<td><em>ASTM C 297</em> &gt;103 kPa (15 psi) avg; no failure of the lamina after 10 cycles freeze-thaw (Tested over various substrates)</td>
</tr>
</tbody>
</table>

### ICC-ES AC 148 Acceptance Criteria for Flexible Flashing Materials

<table>
<thead>
<tr>
<th>Sequential Testing - Weathering</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. UV Light Exposure</strong></td>
<td><em>ICC-ES AC 148</em> No cracking or bond failure to substrate</td>
</tr>
<tr>
<td><strong>2. Accelerated Aging</strong></td>
<td><em>ICC-ES AC 148</em> No cracking or bond failure to substrate</td>
</tr>
<tr>
<td><strong>3. Hydrostatic Pressure Test</strong></td>
<td><em>AATCC 127-1985</em> No water penetration</td>
</tr>
<tr>
<td><strong>Peel Adhesion</strong></td>
<td><em>ASTM D 3330 Method F</em> Tested over ASTM C1177 glass-mat sheathing, OSB, plywood, pvc and uncoated aluminum</td>
</tr>
<tr>
<td><strong>After UV Exposure</strong></td>
<td>Pass</td>
</tr>
<tr>
<td><strong>After Accelerated Aging</strong></td>
<td>Pass</td>
</tr>
<tr>
<td><strong>After Elevated Temperature Exposure</strong></td>
<td>Pass</td>
</tr>
<tr>
<td><strong>After Water Immersion</strong></td>
<td>Pass</td>
</tr>
<tr>
<td><strong>Nail Sealability after Thermal Cycling</strong></td>
<td><em>ASTM D 1970 (Modified), AAMA 711</em> Pass</td>
</tr>
<tr>
<td><strong>Tensile Strength after UV Exposure</strong></td>
<td><em>ASTM D 5034, AAMA 711</em> All samples meet the minimum requirement of 3.5 N/mm (20 lbs/in)</td>
</tr>
<tr>
<td><strong>Cold Temperature Pliability</strong></td>
<td><em>ASTM D 1970, AAMA 711</em> No cracking after bending around a 25 mm (1&quot;) mandrel after 2 hour exposure to -18° C (0° F)</td>
</tr>
<tr>
<td><strong>Resistance to Peeling</strong></td>
<td><em>AAMA 711</em> No sign of distress or failure after 24 hours of exposure at room temperature, 50° C (122° F), 65° C (149° F), 80° C (176° F)</td>
</tr>
</tbody>
</table>
**Senershield-VB**

**MIXING**
1. Use directly from original packaging or 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.
2. Mix SENERSHIELD-VB with a clean, rust-free paddle and drill until thoroughly blended. Dilution of SENERSHIELD-VB is not recommended.
3. Additives, other than LT ADDITIVE, are not permitted.
4. Close container when not in use.
5. Clean tools and equipment with water immediately after use. Dried material can only be removed mechanically.

**APPLICATION**

**Job Conditions**
- Do not apply BASF materials in ambient temperature below 4°C (40°F).
- Provide supplementary heat during installation and drying period (at least 24 hours after installation and until dry) when temperatures less than 4°C (40°F) prevail.
- Do not apply BASF materials to frozen or frost-laden surfaces.
- Limit the weather exposure of SENERSHIELD-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.
- Non-cementitious adhesives are not recommended for EPS insulation board attachment to SENERSHIELD-VB. Proper application is the responsibility of the user.

**Surface Preparation**
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 SENERSHIELD-VB.

**Equipment**
Use a 20 mm (3/4") nap roller or paint brush. If spraying, refer to Spray Application technical bulletin for spray application equipment and application instructions.

**Note:** If using roller application, it is necessary to pre-wet the synthetic roller pad with water and spin out the excess water. The pre-wetting only needs to be done once at the start of application.

**Procedure**
1. Substrate shall be of a type acceptable by BASF and shall be installed per substrate manufacturer’s instructions and local code requirements.
2. Rough openings and sheathing joints can be treated with MAXFLASH Liquid Flashing Membrane or SHEATHING FABRIC saturated with SENERSHIELD-VB. See following sections for additional steps.

**USING MAXFLASH**

**Flashing Rough Openings:**
A. Apply a bead of MAXFLASH in each corner of the rough opening and tool MAXFLASH into corners, ensuring that corners are fully sealed. Where wood bucks are used, tool 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 12-30 mil thickness. Spread MAXFLASH before it skins, typically within 2-3 minutes of application.
B. Extend MAXFLASH membrane minimum 4-inches onto the exterior wall, maintaining 12-30 mil thickness.
C. Allow MAXFLASH to skin before applying BASF fluid-applied air/water-resistive barrier to sheathing. Lap air/water-resistive barrier a minimum of 2-inches onto MAXFLASH, creating a continuous, monolithic air/water-resistive barrier.
D. Allow MAXFLASH to cure before installing windows.

**Sheathing Joints:**
MAXFLASH can be used to fill sheathing joints up to 1/2" wide.
A. Apply a thick bead of MAXFLASH to sheathing joints.
B. Spread MAXFLASH evenly 1-inch beyond the joint on either side. Apply 20-30 mils of MAXFLASH across the sheathing joint.
C. Spot fastener heads with MAXFLASH or BASF fluid-applied air/water-resistive barrier.
D. Allow MAXFLASH to skin before applying subsequent coat of air/water-resistive barrier.

**See the MAXFLASH product bulletin for coverages and additional product highlights.**

**- OR -**

**USING SHEATHING FABRIC**

**Flashing Rough Openings:**
Wrap openings with SHEATHING FABRIC. Applying a generous amount of mixed SENERSHIELD-VB to all surfaces and immediately embedding SHEATHING FABRIC, completely saturating the SHEATHING FABRIC. If necessary, apply a second coat of SENERSHIELD-VB to ensure a complete, void-free membrane.

**Sheathing Joints:**
A. Spot all fasteners and precoat sheathing joints, terminations, inside and outside corners with mixed SENERSHIELD-VB using a 101 mm (4") wide by 20 mm (3/4") nap roller, brush or spray.
B. 1. Immediately place and center SHEATHING FABRIC over wet SENERSHIELD-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 SHEATHING FABRIC extends evenly on both sides of the sheathing joint. Completely saturate SHEATHING FABRIC with SENERSHIELD-VB.
   2. Lap SHEATHING FABRIC 63.5 mm (2 1/2") minimum at intersections.
   3. If using roller, brush, or travelow application, allow to dry to the touch before applying SENERSHIELD-VB to entire wall surface. If spraying, "wet on wet" application is acceptable.
3. Apply SENERSHIELD-VB to DensGlass™ or DensElement exterior sheathing, eXP™ sheathing, GlasRoc® sheathing, Securock® glass-mat sheathing, Weather Defense™, Platinum sheathing, GreenGlass® sheathing, PermaBase™ cement-board by National Gypsum and other cement-boards (ASTM C1325 Type A Exterior), gypsum sheathing (ASTM C79/ASTM C1396) plywood, OSB or CMU substrate(s) with a 20 mm (3/4") nap roller or spray to a consistent, minimum 13 wet mil thickness. Prior to application of the second coat, visually inspect to assure sheathing surface is blister free and coating is free of voids and...
pinholes. Repair if needed and then apply a second coat after the initial coating is sufficiently dry. A minimum of two (2) 13 mil wet coats of SENERSHIELD-VB is required. SENERSHIELD-VB may be sprayed to a 26-mil thickness in one wet application. Backrolling may be needed to produce a pinhole-free film. If backrolling is required, a second spray application may be needed. **Note: Refer to Spray Application technical bulletin for spray application equipment and application instructions.**

**Drying Time**
Allow to dry completely, typically 2 to 10 hours, before proceeding with EIFS or other cladding installation. Protect from rain and from temperatures less than 4°C (40°F) for 24 hours.

**For Best Performance**
Prior to application of EPS insulation boards for EIFS or alternative claddings, visually inspect the SENERSHIELD-VB. For voids, pinholes, surface deficiencies, etc. Repair deficiencies and areas that are not intact. Apply additional SENERSHIELD-VB as necessary such that SENERSHIELD-VB is free of voids, pinholes, etc. All sheathing joints, terminations, inside and outside corners must be reinforced with 4", 6" or 9" SHEATHING FABRIC or WS FLASH 4 or 9 or treated with MAXFLASH. Reference
LIMITATIONS
Shipping & Storage
Protect BASF materials during transportation and installation to avoid physical damage. Store BASF materials in a cool, dry place protected from freezing. Store at no less than 4°C (40°F). Protect from extreme heat and direct sunlight.

Stacking
Do not stack pallets.

Shelf Life
Approximately 2 years, properly stored in original containers.

TECHNICAL SUPPORT
Consult the BASF Wall Systems Technical Services Department for specific recommendations concerning all other applications. Consult the Senergy website, www.senergy.basf.com, for additional information about products and systems and for updated literature.

HEALTH AND SAFETY
Follow good safety and industrial hygiene practices during handling and installing products and systems. Take necessary precautions and wear the appropriate personal protective equipment as needed. Read Safety Data Sheet (SDS) and related literature on this product before specification and/or installation.

Solids
74% solids

VOC Content
11 g/l, or 0.09 lbs/gal less water and exempt solvents per ASTM D2369 (based in part on EPA method 24).

For medical emergencies only call CHEMTREC at (800) 424-9300.

WARRANTY
BASF warrants this product to be free from manufacturing defects and to meet the technical properties on the current Product Bulletin, if used as directed within shelf life. Satisfactory results depend not only on quality products but also upon many factors beyond our control. BASF MAKES NO OTHER WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO ITS PRODUCTS. The sole and exclusive remedy of Purchaser for any claim concerning this product, including but not limited to, claims alleging breach of warranty, negligence, strict liability or otherwise, is shipment to purchaser of product equal to the amount of product that fails to meet this warranty or refund of the original purchase price of product that fails to meet this warranty, at the sole option of BASF. In the absence of an extended warranty issued by BASF, any claims concerning this product must be received in writing within one (1) year from the date of shipment and any claims not presented within that period are waived by Purchaser. BASF WILL NOT BE RESPONSIBLE FOR ANY SPECIAL, INCIDENTAL, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR PUNITIVE DAMAGES OF ANY KIND.

Purchaser must determine the suitability of the products for the intended use and assumes all risks and liabilities in connection therewith.

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