PRODUCT DESCRIPTION

SA Base Sheet FR is a premium self-adhered, fiberglass reinforced, modified bitumen membrane with fire retardant additives manufactured to meet the toughest industry and code requirements. SA Base Sheet FR is manufactured using Adeso® dual-compound technology, where the membrane consists of Styrene Butadiene Styrene (SBS) modified asphalt compound on top and a pressure sensitive adhesive compound on the bottom. The adhesive is covered with a split release liner. SA Base Sheet FR is finished with a polyolefin film with printed lay lines on the top surface. Meets ASTM D6163 Type 1, Grade S (smooth) / ASTM D1970.

BASIC USES

SA Base Sheet FR membranes are designed for applications where the use of hot asphalt, cold process adhesive, or a propane torch is undesirable. Applications include new roofing, recover (retrofit) and BUR repairs. SA Base Sheet can be used as a waterproofing base sheet applied to approved roof decks or substrates. See the Mule-Hide Self-Adhered Modified Bitumen Application Guidelines for complete specifications and details.

SPECIFICATIONS AND PACKAGING

<table>
<thead>
<tr>
<th>Physical Property</th>
<th>Test Method</th>
<th>ASTM Values</th>
<th>Typical Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elongation at Peak Load at 0°F (-18°C)</td>
<td>ASTM D5147</td>
<td>1%</td>
<td>4% MD, 4% XMD</td>
</tr>
<tr>
<td>Peak Load at 73°F (23°C)</td>
<td>ASTM D5147</td>
<td>30 lbf/lin, (5.3) kN/m</td>
<td>66 lbf/lin (11.6 kN/m) -MD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>43 lbf/lin (7.5 kN/m) -XMD</td>
</tr>
<tr>
<td>Elongation at Peak Load at 73°F (23°C)</td>
<td>ASTM D5147</td>
<td>2%</td>
<td>7% MD, 4% XMD</td>
</tr>
<tr>
<td>Tear Strength at 73°F (23°C)</td>
<td>ASTM D5147</td>
<td>35 lbf (156) N</td>
<td>116 lbf (516 N) - MD</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>92 lbf (409 N) -XMD</td>
</tr>
<tr>
<td>Low Temperature Flexibility, max, F° (°C)</td>
<td>ASTM D5147</td>
<td>0°F (-18°C)</td>
<td>Pass</td>
</tr>
<tr>
<td>Adhesion to Plywood @ 40°F (4.4°C)</td>
<td>ASTM D1970</td>
<td>2.0 lbf/ft</td>
<td>7.5 lbf/ft</td>
</tr>
<tr>
<td>Adhesion to Plywood @ 75°F (24°C)</td>
<td>ASTM D1970</td>
<td>12.0 lbf/ft</td>
<td>45.0 lbf/ft</td>
</tr>
<tr>
<td>Sealsability around nail</td>
<td>ASTM D1970</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>Waterproof integrity after low temp flexibility</td>
<td>ASTM D1970</td>
<td>Pass</td>
<td>Pass</td>
</tr>
<tr>
<td>Waterproof integrity of lap seam</td>
<td>ASTM D1970</td>
<td>Pass</td>
<td>Pass</td>
</tr>
</tbody>
</table>

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification or specification range for any particular property of this product.

PRODUCT BENEFITS

1. Pre-applied adhesive on the back of the sheet.
2. Durable - high performance reinforcement mat.
3. No hot asphalt, fumes or flames required for installation.
4. Excellent long term adhesion to multiple substrates and to base plies.
5. Offers low-temp flexibility, puncture and tear resistance.
6. Top film surface allows torching or self-adhering approved cap sheets.
CODE APPROVALS

Various code approvals are available including: Factory Mutual, Underwriters Laboratories, Miami-Dade, Florida Product Approval, ICC-ESR and Texas Department of Insurance. Contact Mule-Hide Technical Department for specific ratings.

APPLICATION GUIDELINES

Apply SA Base Sheet FR only in dry weather and when air and surface temperatures are 40°F (5°C) and rising.

- Apply over clean, dry, dust and debris-free substrates.
- Mule-Hide 121 Asphalt Primer or High-Tack Primer (water based) may be used where a primer is required. Contact Mule-Hide for appropriate uses and further information.
- All substrates shall be designed with proper expansion devices.
- Wood decks shall have all joints cross blocked and/or properly supported.
- Installation of SA Base Sheet FR should not adversely affect the ventilation of existing construction.
- Do not apply directly to existing shingles, shakes or other unacceptable roof coverings.

INSTALLATION INSTRUCTIONS

SA Base Sheet FR is intended to be used as a base sheet or interplay in new or re-roofing applications, and requires the installation of a granulated cap sheet to complete the roofing system.

1. Nail Base or an approved insulation shall be mechanically attached to a suitable substrate. SA Base Sheet FR may be adhered directly to a suitable substrate.
2. Starting at the low point of the roof, unroll the SA Base Sheet FR and allow it to relax.
3. After positioning the sheet, fold the top half of the sheet back lengthwise, remove the release liner and roll the material back into place, taking care to avoid wrinkles and trapped air, and maintaining proper sheet alignment.
4. Firmly hand press sheet from the center out avoiding wrinkles and trapped air as the SA Base Sheet FR adheres to the Nail Base Sheet, or approved substrate.
5. When completing end laps stagger end laps approximately three feet apart. Cut the top corner of the top sheet on a 45-degree angle (start the cut 3" in from the top edge and finish down 3" from the top edge) and the bottom corner of the bottom sheet on a 45-degree angle (start the cut 3" in from the bottom edge and finish 3" up from the bottom edge). Apply a solid bead of Mod Bit Sealant along both cut edges.
6. Repeat procedure to adhere remaining half of the sheet.
7. After the sheet is adhered, it is required to be rolled with a 75 lb. roller, roll across the 3’ width first, then the length of the roll can be rolled.
8. Position subsequent sheets to overlap the previous courses by the width of the selvage edge (overlap in a shingle fashion ensuring that laps are water shedding).

This is only a brief summary and NOT the complete specification. The Mule-Hide Self-Adhered Modified Bitumen Application Guidelines, Specifications, Details, Technical Bulletins, and associated documents should be thoroughly reviewed prior to starting any project.

PROTECTION & SAFETY

Mule-Hide maintains Safety Data Sheets on all of its non-exempt products. Safety Data Sheets contain health and safety information for your development of appropriate product handling procedures to protect your employees and customers. Mule-Hide's Safety Data Sheets should be read and understood by all of your supervisory personnel and employees before using Mule-Hide products in your facilities.

ADDITIONAL INFORMATION

The information given on this PDS is subject to change without notice. Always check the Mule-Hide website at www.mulehide.com for the latest information, changes and updates or contact Mule-Hide Products Company at 800-786-1492.
DISCLAIMER

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