Root Barrier VR
A Polymeric Membrane for Protection of Roofing and Waterproofing Membranes under Vegetated Roof Systems from Root Penetration

Composition: Root Barrier VR is a membrane sheet manufactured from a High Density Polyethylene (HDPE) thermoplastic copolymer. Root Barrier VR has superior stress crack resistance and high impact resistance strength. Root Barrier VR is asbestos free.

Basic Uses: Root Barrier VR is used to protect waterproofing membranes under a Vegetated Roof System from root penetration. Root Barrier VR is a non-organic sheet which will permanently resist the penetration of roots through the membrane layer. The use of Root Barrier VR is required on Intensive Type Vegetated Roof Systems, which consist of soil systems greater than 6” (300 mm) and plants with potentially invasive tap roots. Root Barrier VR may also be specified on vertical surfaces to prevent root penetration into foundation walls and other below grade waterproofing membrane systems.

Limitations:
• Not intended for use as a ply sheet or membrane in a cold applied or hot applied roof system.
• Not intended for use in applications directly exposed to sunlight, weathering, or foot traffic.
• Do not use electric hot air heat welding for Root Barrier VR-20 mil.

Standards: Meets ASTM D 1248-05, Type III, Class A, Category 5.

Packaging: Available in rolls, 4’ x 100’ (1.2m x 30.4 m), in both 20 mil and 40 mil thickness.

Color: Available in black or in opaque white.

APPLICATION DATA:
Waterproofing System: Waterproofing Membrane and flashings must be fully installed, inspected and approved by Tremco, and water-tight prior to application of Root Barrier VR.

Surface Preparation: Substrate must be properly sloped, smooth, free of sharp protrusions, clean of dirt, and dry prior to installation of Root Barrier VR.

Solvent based adhesives and coatings must be fully cured and able to withstand foot traffic prior to installation of Root Barrier VR.

Application: Plan placement of Roof Barrier VR to ensure water will flow over or along, but not against lap edges. In horizontal applications, start at the low end of the roof and install Root Barrier VR directly to the cured waterproofing membrane. Extend Root Barrier VR up walls, curbs, and projections.

Overlap edges and end laps 2 inches (50 mm). Electric hot air heat welding equipment may be used to seal side and end laps of Root Barrier VR-40 mil.

Seams along side laps, corners and projection bases may be sealed using Para JT Tape or Permanent Seam Tape.

Precautions: Users must read container labels and Material Safety Data Sheets for health and safety precautions prior to use.

Availability and Cost: Contact your local Tremco Roofing Representative for pricing and availability. For the name of your Representative, call the Roofing Division at 216/292-5000.
Physical Performance Characteristics

<table>
<thead>
<tr>
<th>Property</th>
<th>Typical Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density</td>
<td>0.949 g/cm³</td>
<td>ASTM D 1505-98</td>
</tr>
<tr>
<td>Thickness</td>
<td>20 mil (0.5 mm)</td>
<td>ASTM D 6988-08</td>
</tr>
<tr>
<td></td>
<td>40 mil (1.0 mm)</td>
<td></td>
</tr>
<tr>
<td>Tensile Strength at yield</td>
<td>3,600 psi (25 MPa)</td>
<td>ASTM D 638-01</td>
</tr>
<tr>
<td>Elongation at break</td>
<td>&gt;600%</td>
<td></td>
</tr>
<tr>
<td>Impact Brittleness</td>
<td>&lt; -105°F (&lt; -76°C)</td>
<td>ASTM D 746-98</td>
</tr>
<tr>
<td>Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardness, Shore D</td>
<td>68</td>
<td>ASTM D 2240-02</td>
</tr>
<tr>
<td>Vicat Softening Temperature</td>
<td>254°F (123°C)</td>
<td>ASTM D 1525-00</td>
</tr>
</tbody>
</table>

Maintenance: Your local Tremco Roofing Representative can provide you with effective maintenance procedures which may vary, depending upon specific conditions. Periodic inspections, early repairs and preventive maintenance are all part of a sound roof program.

Guarantee/Warranty: Tremco Inc. warrants Root Barrier VR to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any Root Barrier VR product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYER’S SOLE AND EXCLUSIVE REMEDY. All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Technical Services: Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weather-proofing technology, complement and extend the services of the Tremco Technical Service staff.

Statement of Policy and Responsibility: Tremco takes responsibility for furnishing quality materials and for providing specifications and recommendations for their proper installation.

As neither Tremco itself nor its Representatives practice architecture or engineering, Tremco offers no opinion on, and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the Owner should obtain the opinion of competent structural engineers before proceeding. Tremco accepts no liability for any structural failure or for resultant damages, and no Tremco Representative is authorized to vary this disclaimer.

Tremco Inc. warrants Root Barrier VR to be free of defects and to meet published physical properties when tested according to ASTM and Tremco standards. Under this warranty, any Root Barrier VR product that is proved to be defective when applied in accordance to our written instructions, and in applications recommended by Tremco as suitable for this product will be replaced with like product at no charge. THIS IS BUYER’S SOLE AND EXCLUSIVE REMEDY. All claims concerning product defects must be made in writing within twelve (12) months of shipment. The absence of such claims in writing during this period will constitute a waiver of all claims with respect to such product.

This warranty shall be IN LIEU OF any other warranty, express or implied, including but not limited to, any implied warranty of MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Technical Services: Your local Tremco Representative, working with the Technical Service Staff, can help analyze conditions and needs to develop recommendations for special applications. The services of the Tremco Research Center, which has earned a unique reputation in weather-proofing technology, complement and extend the services of the Tremco Technical Service staff.

Statement of Policy and Responsibility: Tremco takes responsibility for furnishing quality materials and for providing specifications and recommendations for their proper installation.

As neither Tremco itself nor its Representatives practice architecture or engineering, Tremco offers no opinion on, and expressly disclaims any responsibility for the soundness of any structure on which its products may be applied. If questions arise as to the soundness of a structure or its ability to support a planned installation properly, the Owner should obtain the opinion of competent structural engineers before proceeding. Tremco accepts no liability for any structural failure or for resultant damages, and no Tremco Representative is authorized to vary this disclaimer.