All beautiful siding projects begin with a solid foundation. You need a material that provides a flat and level surface for new siding. Combine those features with Energy Efficiency, Moisture Resistance, Strength, Durability and Value and you have found the perfect underlayment. Polar-R® was developed to meet all of those requirements. The Polar-R® design incorporates high performance EPS insulation with strong film facings making it a durable underlayment for the application of new siders. EPS is long known in the construction industry for its superior energy efficiency. The Polar-R® design wraps your home in a continuous insulation envelope that reduces air infiltration and gives you a lifetime of energy savings.

The Polar product line is also available as a fan fold insulation which is manufactured with the same quality materials in 4’ X 50’ sheets and comes in 3/8” & 1/2” thicknesses.

**Installation Instructions**

1. The substrate should be flat, dry and free of any foreign materials that would damage the Polar-R® Insulation board. The beginning of installation indicates that the installer has accepted the condition of the existing substrate.

2. Install Polar-R® directly over existing substrate using galvanized or aluminum roofing nails, remove any damaged siding and install directly over framing members if necessary.

3. Avoid over-driving of fasteners because this will compress the insulation and create a wavy appearance of the new siding exterior. The installer should be careful when installing new siding materials. The board must lay flat and be adequately fastened.

4. Install the new siding directly over the Polar-R® per the siding manufacturers recommendations.

5. A higher R-Value can be achieved by using 1/2" furring strips between the existing substrate and the Polar-R® reflective surface. (Consult the R-Value chart for more information)

**R-Value Chart**

<table>
<thead>
<tr>
<th>Property</th>
<th>Unit of Measure</th>
<th>1/2” +FF 500</th>
<th>1/2” ++RF 500</th>
<th>3/4” +FF 750</th>
<th>3/4” ++RF 750</th>
<th>1” +FF 1000</th>
<th>1” ++RF 1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance (R Value) Per Thickness</td>
<td></td>
<td>2.0</td>
<td>4.8**</td>
<td>3.0</td>
<td>5.8**</td>
<td>4.0</td>
<td>6.8**</td>
</tr>
</tbody>
</table>

Caution: EPS contains a flame retardant; however, it should be considered combustible and not exposed to sources of ignition. EPS core is manufactured to meet the requirements of ASTM C-578 and is listed under ICC 1006. Polar is listed under ICC ESR-1504. Consult ACH Foam Technologies for current code compliance. Other sizes and densities available to suit project requirements.

*See manufacturers recommendations or Tech Data Brochure for more information.

**System R-Values are calculated from the ASHRAE Handbook of Fundamentals with the reflective facing adjoining a 3/4" parallel dead air space. The R-Values of these products installed without an airspace are 2.0 (1/2"), 3.0 (3/4") and 4.0 (1").

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**Moisture Resistant**

Low water absorption and moderate permeability in an exterior sheathing helps create a more comfortable interior living environment. Polar-R® enhances the energy performance of the structure because it utilizes a high efficiency core of EPS insulation wrapped with strong film facings creating a water resistant insulation board.

**Level Surface**

Polar-R® creates a continuous level surface. Waviness and buckling are reduced for a beautiful siding job. Polar R® comes in a range of thicknesses and is very easy to install because it comes in convenient 4’ x 8’ sheets.

**Energy Efficient**

Polar-R® uses high performance EPS insulation, one of the most energy efficient insulations used in the construction industry today. EPS has a 35 year history of proven performance. Polar-R® will provide for a lifetime of energy savings. The Polar-R® EPS core has never contained CFC’s, HFC’s, or any ozone depleting compounds and has a 50-year R-value warranty.

**Durable**

Polar-R® is strong and tough enough to meet the demands of the construction industry. High efficiency EPS wrapped in film facers insures that you will be working with a durable lightweight rigid insulation board. Consequently, it is much easier to handle and greatly reduces warehouse and job site damage.

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[**ACH Foam Technologies**](www.achfoam.com)