ThermalStar Flute Fill is designed specifically for use over standing seam metal roof systems that are to be re-covered with a new roof membrane. Flute Fill serves as a cost effective rigid insulation solution that is customized per project to act as a void filler over existing metal roofs, prior to installing a cover board and membrane.

<table>
<thead>
<tr>
<th>Property &amp; ASTM Test Method</th>
<th>ASTM Test Method</th>
<th>Compressive Strength (minimum psi) at 10% Deformation</th>
<th>R-value (minimum) at 75ºF mean temp</th>
<th>R-value (minimum) at 40ºF mean temp</th>
<th>R-value (minimum) at 25ºF mean temp</th>
<th>ASTM Classification</th>
<th>Coefficient of Linear Expansion</th>
<th>Flexural Strength (typical psi)</th>
<th>Water Absorption % by volume, maximum after 24 hr immersion</th>
<th>Water Vapor Permeance at 1” Thick (perms)</th>
<th>Surface Burning- Flame Spread and Smoke Developed</th>
<th>Maximum Use Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength</td>
<td>D1621</td>
<td>10</td>
<td>3.7</td>
<td>4.0</td>
<td>4.3</td>
<td>C578</td>
<td>0.000035</td>
<td>C203</td>
<td>22</td>
<td>3.0</td>
<td>E84</td>
<td>-</td>
</tr>
<tr>
<td>R-value (minimum) at 75ºF</td>
<td>C518</td>
<td>15</td>
<td>3.9</td>
<td>4.2</td>
<td>4.4</td>
<td>Type I</td>
<td>0.000035</td>
<td>Typical E96</td>
<td>30</td>
<td>2.5</td>
<td>Flame Spread &lt;20, Smoke Developed &lt;400 [meets code]</td>
<td>-</td>
</tr>
<tr>
<td>R-value (minimum) at 40ºF</td>
<td>C518</td>
<td>20</td>
<td>4.0</td>
<td>4.4</td>
<td>4.6</td>
<td>Type VIII</td>
<td>0.000035</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-value (minimum) at 25ºF</td>
<td>C518</td>
<td>25</td>
<td>4.0</td>
<td>4.4</td>
<td>4.8</td>
<td>Type II</td>
<td>0.000035</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASTM Classification</td>
<td>C518</td>
<td>101-M</td>
<td>151-M</td>
<td>151-M</td>
<td>201-M</td>
<td>Type IX</td>
<td>0.000035</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Standard features include:
- All Flute Fill orders are precisely CNC cut to meet the roof profile supplied by the customer.
- Available as flute fill or flute fill sheets. Specify square, tapered, beveled or profile cut edges.
INSTALLATION AND HANDLING
ThermalStar Flute Fill can be handled much the same as any other foam or wood sheathing, using similar tools or a simple utility knife to customize panels to fit the application.

SAFETY
SDS for this product are available at atlaseps.com. Dust generated from sanding or cutting ThermalStar Flute Fill should be avoided using a dust mask. ThermalStar Flute Fill insulation is combustible and the product should be protected from ignition sources such as open flames or welder’s torch. Applications not specifically listed in UL ER16529.1 require permanent separation of ThermalStar Flute Fill insulation from the interior of the building by a thermal barrier such as drywall or concrete for fire safety.

WARRANTY
ThermalStar Flute Fill insulation is backed by a limited lifetime warranty for physical and thermal performance.

CODE COMPLIANCE
ThermalStar Flute Fill insulation complies with the model building codes when properly installed:

- Surface Burning – UL BRYX.R16529
- Physical Properties – UL QORW.R16529
- CAN/ULC S102.2, S701 – ULC BOZCC. R16529
- International Energy Conservation Code
- International Residential Code (IRC) – ICC-ES ESR-1962, UL16529-1
- ASTM C578 – See product marketing for Type
- Roof Assembly Approvals – UL TGFU.R16529, UL TGKX.666

Advantages of ThermalStar Flute Fill:

STABILITY
Using ThermalStar Flute Fill provides a uniform and flat base for a new roof assembly.

LONG TERM R-VALUE:
ThermalStar Flute Fill’s thermal properties do not degrade over time, allowing the R-value to remain the same over its entire service life.

ENVIRONMENTALLY FRIENDLY:
ThermalStar Flute Fill does not contain any harmful materials such as chlorofluorocarbon (CFC), hydrochlorofluorocarbon (HCFC), hydrofluorocarbon (HFC), formaldehyde or HFC-R134a.

RECYCLABLE:
At the end of its service life, ThermalStar Flute Fill is readily accepted for recycle. Visit epspackaging.org to locate a drop-off location nearest you.

For performance you can trust, and a low cost and valuable solution you will appreciate, specify ThermalStar Flute Fill rigid insulation on your next project.