GFP Insulation™

GFP Insulation™ is an advanced insulation technology. The product is composed of two external aluminum foil/polymer laminates and five internal specially formulated, aluminum metalized films. When expanded, the internal, low-emittance aluminum layers form a honeycomb structure. These sealed exterior aluminum foil barrier films provide thermal resistance, flammability protection, and properties to contain air or a low-conductivity inert gas. GFP Insulation™ incorporates an advanced design and specially formulated components to effectively address the three methods of heat transfer: radiation, conduction, and convection.

Features & Benefits
GFP Insulation™ has distinct advantages over conventional insulation products including:
- Unique thermal characteristics and performance
- Increased thermal performance with low conductive inert gases
- Fiber-free and no harmful off-gassing.
- Mold Resistant - contains no cellulose or food for mold and will not absorb moisture
- Compact - packaged flat and expanded for installation
- Lightweight - easy to transport and install
- Meets LEED and other Green Building Program Requirements

Product Information

<table>
<thead>
<tr>
<th>Panel</th>
<th>16” o.c. (40.64cm)</th>
<th>24” o.c. (60.96cm)</th>
<th>24” o.c. (60.96cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width Un-expanded</td>
<td>17”</td>
<td>25”</td>
<td>25”</td>
</tr>
<tr>
<td>Width Expanded</td>
<td>15”</td>
<td>23”</td>
<td>23”</td>
</tr>
<tr>
<td>Length Un-expanded</td>
<td>66”</td>
<td>66”</td>
<td>25”</td>
</tr>
<tr>
<td>Length Expanded</td>
<td>48”</td>
<td>48”</td>
<td>23”</td>
</tr>
<tr>
<td>Thickness Un-expanded</td>
<td>1/64”</td>
<td>0.4mm</td>
<td>0.4mm</td>
</tr>
<tr>
<td>Thickness Expanded</td>
<td>1 ½”</td>
<td>3.8cm</td>
<td>1 ½”</td>
</tr>
<tr>
<td>Weight Un-expanded</td>
<td>8.8 oz</td>
<td>13.4 oz</td>
<td>6.7 oz</td>
</tr>
<tr>
<td>Weight Expanded</td>
<td>8.9 oz</td>
<td>13.5 oz</td>
<td>6.75 oz</td>
</tr>
<tr>
<td>Weight: Pounds / SQFT</td>
<td>.111</td>
<td>.105</td>
<td>.105</td>
</tr>
<tr>
<td>Coverage</td>
<td>5 SQFT</td>
<td>8 SQFT</td>
<td>4 SQFT</td>
</tr>
</tbody>
</table>

Thermal Performance
Through the use of a dual-action pump or with a regulated compressor, GFP Insulation™ can be expanded with air. To expand GFP Insulation™ with other inert gases for greater thermal performance, use a tank with a regulator. Argon and other inert gases such as Xenon or Krypton can be used to achieve R-values up to R-11 for the 1 ½” GFP Insulation™ panel.

System Thermal Performance
Due to the high reflectivity and low emissivity of the exterior surfaces of GFP Insulation™, the overall resistance to heat flow will be increased when the outer surfaces of the GFP panel are exposed to air. For example; installing GFP argon filled insulation in the center of a 2”x4” wall assembly, will achieve an R-13.1. Furthermore, GFP Insulation™ can be combined with other insulations for hybrid solutions. For example, combining GFP Insulation™ filled with xenon and a ½” of R-6 per inch spray applied foam, will result in an R-value of R-20 in a 2”x4” wall cavity. Test results and calculations are available on www.gfpinsulation.com.

Test Data
ASTM E-96 - Water Vapor Permeance, Un-Expanded.........0.00
ASTM E-84-07 - Flammability
  Flame Spread Rating……………………………………..< 20
  Smoke Development Rating…………………………..< 65
  Interior Wall & Ceiling Finish Classification……..Class A
ASTM D-3310 - Corrosivity…………………………None
ASTM C-1224-99 (9.2.1 & 9.2.2) Adhesive Performance
  Bleeding………………………………………………None
  Delamination…………………………………………None
  Pliability………………………………………………No signs of cracking or delamination
ASTM C-1338 - Mold & Mildew……………………....Pass
ASTM C-1371 - Foil Emittance…………………………0.03
ASTM E-2129……………………………………Contributes to Building Sustainability