When expectations exceed ordinary, X-Grade® rigid insulation is the only choice.

It's the proven XPS replacement for both commercial and residential projects including:

- Below grade
- Foundations
- Freezers and cold storage

For more information, please visit our website at:  
www.ThermalStar.com/Products/X-Grade

<table>
<thead>
<tr>
<th>Property</th>
<th>ASTM Test Method</th>
<th>X-Grade 15</th>
<th>X-Grade 25</th>
<th>X-Grade 40</th>
<th>X-Grade 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compressive Strength (minimum psi) at 10% Deformation¹</td>
<td>D1621</td>
<td>15</td>
<td>25</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>R-value per inch (minimum) at 75°F Mean Temperature</td>
<td>C518</td>
<td>4.2</td>
<td>4.2</td>
<td>4.2</td>
<td>4.4</td>
</tr>
<tr>
<td>ASTM Classification</td>
<td>C578</td>
<td>Type II</td>
<td>Type II</td>
<td>Type XIV</td>
<td>Type XV</td>
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<tr>
<td>R-value per inch (minimum) at 40°F Mean Temperature</td>
<td>C518</td>
<td>4.6</td>
<td>4.7</td>
<td>4.7</td>
<td>4.7</td>
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<tr>
<td>R-value per inch (minimum) at 25°F Mean Temperature</td>
<td>C518</td>
<td>4.8</td>
<td>4.9</td>
<td>5.0</td>
<td>5.0</td>
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<tr>
<td>Compressive Strength (minimum psi) at 1% Deformation¹</td>
<td>D1621</td>
<td>9</td>
<td>10</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>Flexural Strength (minimum psi)</td>
<td>C203</td>
<td>42</td>
<td>50</td>
<td>75</td>
<td>95</td>
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<tr>
<td>Water Absorption Percent (%) by Volume, Maximum After 24 Hour Immersion</td>
<td>C272</td>
<td>1.5</td>
<td>1.25</td>
<td>1.25</td>
<td>1.0</td>
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<tr>
<td>Water Vapor Permeance at 1” Thick (perms)</td>
<td>Typical E96, desiccant method</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
<td>2.5</td>
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<tr>
<td>Surface Burning - Flame Spread and Smoked Developed</td>
<td>E84</td>
<td>FS 20, SD 400 (meets code)</td>
<td></td>
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<tr>
<td>Maximum Use Temperature</td>
<td>-</td>
<td>Short Term (10–15 minutes) 180°F, Long term 165°F</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ ThermalStar X-Grade is elastic within 1–2% deformation. To prevent long term creep, 3:1 design safety factors for static loads of the 10% deformation values are recommended, or use the tested 1% deformation values for design, whichever is greater.
Advantages of X-Grade:

**STABLE R-VALUE**
While XPS products have a higher initial R-value, X-Grade’s thermal properties do not degrade over time, allowing the R-value to remain the same over the life of the structure.

**LONG TERM MOISTURE RESISTANCE:**
The coefficient of water absorption is a property used to define a building material’s likeliness to soak up water, with a sponge having a value of 1.0. In comparison, X-Grade has a coefficient of zero.

**INTEGRATED TERMITICIDE:**
X-Grade has an integrated termiticide to prevent any termite damage or infestation.

**ENVIRONMENTALLY FRIENDLY:**
XPS utilizes HCFC gases in its insulating cells to achieve an initial higher R-value and has an extremely high global warming potential (GWP) of 1430, whereas the insulating cells of X-Grade simply contain air, providing an environmentally friendly solution with a GWP of zero.

**RECYCLABLE:**
X-Grade is readily accepted for recycle. Visit epspackaging.org to locate a drop-off location nearest you.

**INSTALLATION AND HANDLING**
X-Grade can be handled much the same as any other foam or wood sheathing, using similar tools or simple utility knives to customize panels to fit the application.

**SAFETY**
SDS for this product are available at atlaseps.com. Dust generated from sanding or cutting X-Grade should be avoided using a dust mask. X-Grade 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 X-Grade insulation from the interior of the building by a thermal barrier such as drywall or concrete for fire safety.

**WARRANTY**
X-Grade Insulation is backed by a limited lifetime warranty for physical and thermal performance, and termite resistance.

**CODE COMPLIANCE**
ThermalStar X-Grade 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
- ASTM C578 – (See product marking for type)

**Specify ThermalStar X-Grade on Your Next Project!**