About Polyiso Insulation

Polyiso is a rigid foam insulation used in more than 70% of commercial roof construction and offers a continuous insulation solution for commercial and residential wall assemblies. As one of North America’s most widely used and readily available building products, Polyiso is a cost-effective insulation option for reducing building energy use and improving the overall service-life of roofs and walls.

The benefits of using Polyiso include:
- High R-value per inch of thickness
- Excellent fire test performance
- Extensive building code approvals
- Cost-effective continuous insulation (ci) solution
- Compatible with most roof and wall systems
- Dimensional stability
- Compressive strength
- Moisture resistance
- Thinner walls and roofs with shorter fasteners
- Long service life
- Preferred insurance ratings
- Virtually no global warming potential
- Zero ozone depletion potential
- Recyclable through reuse
- Recycled content (amount varies by product)
- Regional materials (nationwide production network)
- QualityMark™ certified LTTR-values

Building Fire Safety

All construction materials must provide a suitable margin of fire safety. Codes and test standards set the minimum level of overall building fire safety as well as minimum levels of fire performance for specific construction materials such as insulation and roof and wall assemblies that incorporate insulation. These codes and standards are developed and maintained through consensus-based processes. Groups of experts and other stakeholders that include representatives beyond product manufacturers contribute to the various code and standard development processes.

Roofing Applications:
Commercial roofs are subjected to full assembly fire testing and individual material components like insulation are required to meet additional product-specific fire performance criteria (i.e., flame spread).

Wall Applications: Exterior walls of any height on commercial buildings (IBC Types I-IV) that contain combustible components must be evaluated for full-assembly fire performance per NFPA 285.1 Exterior wall assemblies containing foam plastic insulation are subject to the NFPA 285 testing requirements. Foam plastic insulation products are also required to meet additional product-specific fire performance criteria for flame spread and smoke development.

Comparing Fire Performance

The relative fire performance of insulation board materials can offer advantages when designing roof and wall assemblies for commercial buildings. This technical bulletin compares certain fire performance advantages for the following product types:

- Polyiso insulation
- Mineral wool board insulation
- XPS insulation
- EPS insulation

<table>
<thead>
<tr>
<th>Insulation Type</th>
<th>Roof Applications – Direct attachment to steel roof decks without an additional thermal barrier.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyiso²</td>
<td>✓</td>
</tr>
<tr>
<td>Mineral Wool Board</td>
<td>✓</td>
</tr>
<tr>
<td>Extruded Polystyrene (XPS)</td>
<td>X</td>
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<tr>
<td>Expanded Polystyrene (EPS)</td>
<td>X</td>
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<th>Insulation Type</th>
<th>Wall Applications – Flexibility when designing NFPA 285-compliant wall assemblies for commercial construction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyiso</td>
<td>✓  Compatible with a wide variety of cladding options.</td>
</tr>
<tr>
<td>Mineral Wool Board</td>
<td>✓  Compatible with a wide variety of cladding options.</td>
</tr>
<tr>
<td>Extruded Polystyrene (XPS)</td>
<td>X  Limited design options for cladding.</td>
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2 Direct-to-deck assemblies containing polyiso insulation meeting NFPA 276 (FM 4450) or UL 1256 can be installed without a thermal barrier.
PIMA

For more than 30 years, the Polyisocyanurate Insulation Manufacturers Association (PIMA) has served as the voice of the rigid polyiso industry, proactively advocating for safe, cost-effective, sustainable, and energy-efficient construction. Organized in 1987, PIMA is an association of polyiso manufacturers and industry suppliers. Polyiso is one of North America’s most widely-used and cost-effective insulation products.

PIMA produces technical bulletins to address frequently asked questions about polyiso insulation. These publications update and inform architects, specifiers, and contractors about and build consensus on the performance characteristics of polyiso insulation. Individual companies can provide specific information about their respective polyiso products.

For more information on polyisocyanurate insulation, visit www.polyiso.org