The applicable building energy code that determines the minimum insulation requirements for commercial roofs with insulation entirely above the deck in Wisconsin is the 2015 Wisconsin Commercial Building Code (based on the 2015 International Energy Conservation Code with state-specific amendments). This code is effective May 1, 2018. The minimum insulation requirements apply both to new construction and roof replacements on existing buildings.

The current model code requirements for insulation entirely above the roof deck are 40-50% more stringent (R-30 for CZ6; R-35 for CZ7) than the State's minimum requirements. Building owners should consider exceeding the State's minimum requirements when installing a new or replacement roof system in order to improve energy efficiency and reduce operating costs.

**Minimum R-value Requirements for Insulation Entirely Above the Roof Deck**

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**Notes**

- **About R-value:** R-value is a measurement of a material's ability to resist heat flow. The higher the R-value, the greater the insulating power. Installers should consult data sheets provided by polyiso manufacturers for information on product-specific R-values.

- **Code Compliance:** The International Energy Conservation Code recognizes ASHRAE 90.1 as an alternate compliance option for both new construction and existing buildings.

**Resources**

- Polyisocyanurate Insulation Manufacturers Association
- U.S. Department of Energy
**Option #1 - R-20ci Roof Assembly**

- Roof Membrane
- 1.75” Polyiso Boards
- Structural Roof Deck

Two layers of 1.75” polyiso \( \text{R-20.0} \)

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**Option #2 - R-20ci Roof Assembly**

- Roof Membrane
- 0.5” HD Polyiso Cover Board
- 1.6” Polyiso Boards
- Structural Roof Deck

Two layers of 1.6” polyiso \( \text{R-18.2} \)

<table>
<thead>
<tr>
<th>0.5” HD polyiso cover board</th>
<th>( \text{R-2.5} )</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>( \text{R-20.7} )</td>
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</tbody>
</table>

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**Option #1 - R-25ci Roof Assembly**

- Roof Membrane
- 2.2” Polyiso Boards
- Structural Roof Deck

Two layers of 2.2” polyiso \( \text{R-25.2} \)

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**Option #2 - R-25ci Roof Assembly**

- Roof Membrane
- 0.5” HD Polyiso Cover Board
- 2.0” Polyiso Boards
- Structural Roof Deck

Two layers of 2.0” polyiso \( \text{R-22.8} \)

<table>
<thead>
<tr>
<th>0.5” HD polyiso cover board</th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>( \text{R-25.3} )</td>
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</table>
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.

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.

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