Tennessee Minimum Insulation Requirements for Low-Slope Commercial Roofing

The applicable building energy code that determines the minimum insulation requirements for commercial roofs with insulation entirely above the deck in Tennessee is the 2012 International Energy Conservation Code with exceptions for specific building types noted here. This code is effective August 4, 2016. 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 20-25% more stringent (R-25 for CZ3; R-30 for CZ4) 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

![Map of Tennessee showing minimum R-values for different climate zones.]

**Minimum R-values:**
- Climate Zone 4: R-25ci
- Climate Zone 3: R-20ci

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 | R-20.0

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 | R-18.2
0.5" HD polyiso cover board | R-2.5
Total | R-20.7

Option #1 - R-25ci Roof Assembly

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

Two layers of 2.2" polyiso | R-25.2

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 | R-22.8
0.5" HD polyiso cover board | R-2.5
Total | R-25.3
About PIMA

Since 1987, PIMA has served as the voice of the North American rigid polyiso insulation industry. PIMA is a leading advocate for safe, cost-effective, sustainable, and energy-efficient construction. The Association is comprised of polyiso manufacturers and industry suppliers, and represents the public policy interests of its membership at the local, national, and international levels to advance high-performance building practices.

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