

ASHRAE Standard 90.1 2007

About Polyiso Insulation

Polyiso is a rigid foam insulation used in over 70% of commercial roof construction, in commercial sidewall construction and in residential construction.

The Benefits of using Polyiso include:

- Quality Mark™ certified LTTR-values
- Highest R-value per inch of thickness
- Excellent fire test performance
- Moisture resistant
- Dimensional stability
- Superior compressive strength
- Extensive building code approvals
- Cost effective
- Recycled content
- Zero ozone depletion potential
- Virtually no global warming potential
- Preferred insurance ratings
- Nationwide availability
- Thinner walls and roofs with shorter fasteners
- Compatible with most roofing systems

PIMA and polyiso products have received many environmental awards. These include an honorable mention in the Sustainable Buildings Industry Council's (SBIC) 2003 "Best Practice" Sustainability Awards Program and the U.S. EPA's Climate Protection Award for the association's leadership in promoting energy efficiency and climate protection. The EPA also awarded PIMA and its members the Stratospheric Ozone Protection Award for "leadership in CFC phase-out in polyiso insulation and in recognition of exceptional contributions to global environmental protection."



The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) is an international technical society which publishes a well recognized series of standards and guidelines that are referenced in building codes. One such standard is ASHRAE Standard 90.1 which represents the minimum required prescriptive R-value (resistance to heat flow) for roof and wall insulation levels. More specifically, this ASHRAE Standard addresses building envelope and system requirements for commercial buildings, residential buildings higher than three stories, and semi-conditioned buildings (warehouses, etc.). It is the nation's model standard for establishing the energy performance requirements of these building types.

ASHRAE 90.1-2007

In 2007, the R-value requirements for this standard were increased by 33% for climate zones 2 thru 8. The above-deck roof insulation requirements for those climate zones increased from **R-15 to R-20**.

This was an historic change as it marked the first time in 18 years that ASHRAE had made a change to this code and it represents ASHRAE's first step to support making buildings significantly more efficient. These new values also represent a new national standard against which all codes can be compared. Architects, specifiers and other certifying professionals have a new standard of care to meet regarding commercial building energy efficiency.

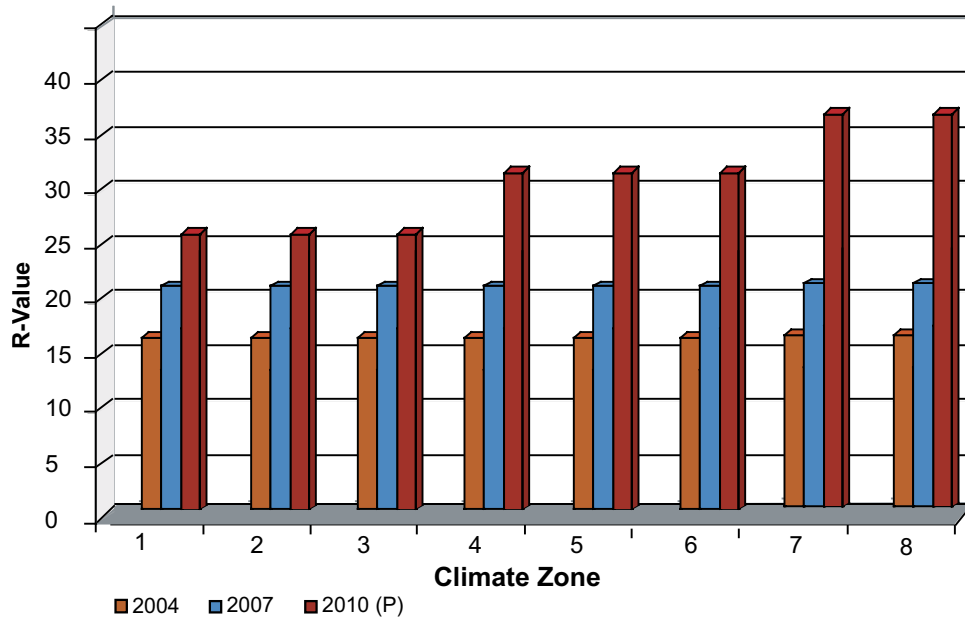
In many ways these new insulation levels were long overdue. Architects and designers across the country seeking beyond-code recognitions (such as LEED, Energy Star, Building America, etc.) have, for many years, been installing insulation at levels that exceed these values.

Proposed ASHRAE 90.1 - 2010

In its work to continue to improve the code minimum for building energy efficiency by at least 30%, ASHRAE will propose greater insulation levels for above deck, attic, wall and below grade insulations of all types. ASHRAE is expected to release an Independent Substantive Change (ISC) proposal regarding the minimum building envelope measures for the 2010 version of Standard 90.1. These increases will apply to commercial buildings, high-rise residential buildings and semi-conditioned buildings covered under this code.

The chart below shows the changes proposed for Above Deck Roof Insulation for commercial buildings. The minimum insulation levels proposed are unprecedented – **essentially a doubling from the 2004 version of the Standard for every climate north of Florida.**

Above Deck Insulation - Commercial

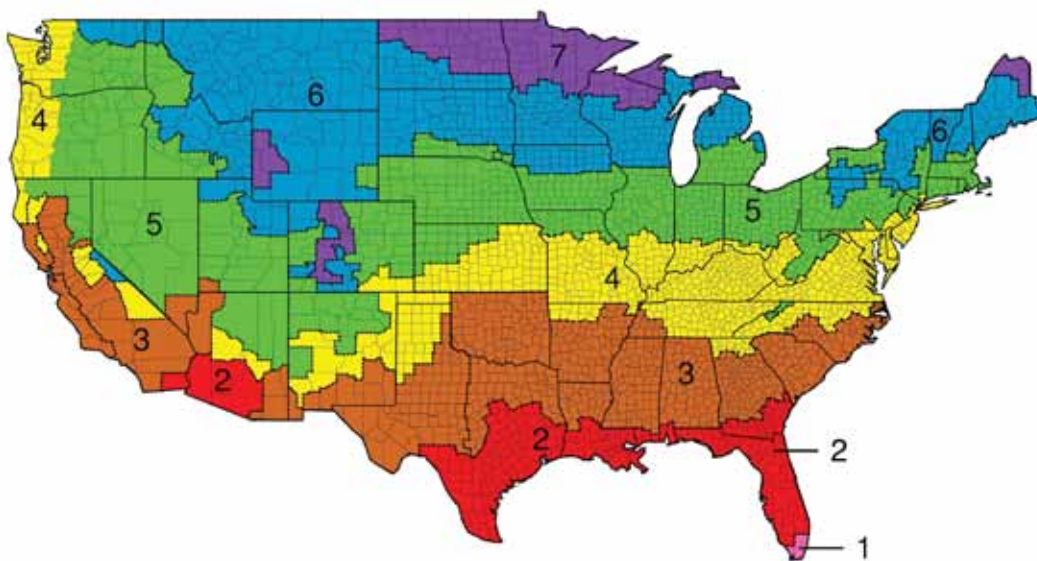


Advanced Building Envelopes Offer Superior Performance

PIMA and its members endorse advanced building envelopes that exceed the code and offer superior energy performance. In all climate zones, insulation can dramatically help to reduce cooling loads and lower energy costs. This is predicated on existing ASHRAE requirements and independent analysis that concludes that additional roof insulation is cost effective, saves energy, and reduces pollution and carbon emissions.

Minimum R-Value Map - United States

The Climate Zones shown here have been determined by the U.S. Department of Energy at the Pacific Northwest National Laboratory and have been adopted by the International Code Council for use in its building codes.



All of Alaska is in Zone 7 except for the following Boroughs which are in Zone 8: Bethes, Dellingham, Fairbanks N. Star, Nome, North Slope, Northwest rctic, Southeast Fairbanks, Wade Hampton, Yukon-Koyukuk. Zone 1 includes Hawaii, Guam, Puerto Rico and the Virgin Islands.

In order to provide the most up-to-date technical and industry information about polyiso insulation, PIMA—the trade association of the polyiso industry—researches and posts technical bulletins, advisories and case studies. These documents are published as a public service to help expand the knowledge of architects, consultants, building owners and roofing contractors and to build consensus on the performance characteristics of polyiso. For continued updates and additional information on this important topic visit www.polyiso.org, or contact a polyiso manufacturer.

PIMA

For over 20 years, PIMA (Polyisocyanurate Insulation Manufacturers Association) has served as the unified voice of the rigid polyiso industry proactively advocating for safe, cost-effective, sustainable and energy efficient construction.

PIMA produces technical bulletins in an effort to address frequently asked questions about polyiso insulation. PIMA's technical bulletins are published to help expand the knowledge of specifiers and contractors and to build consensus on the performance characteristics of polyiso. Individual companies should be consulted for specifics about their respective products.

PIMA's membership consists of manufacturers of polyiso insulation and suppliers to the industry. Our members account for a majority of all of the polyiso produced in North America.

SAFETY

Polyiso insulation, like wood and other organic building materials is combustible. Therefore, it should not be exposed to an ignition source of sufficient heat and intensity (e.g., flames, fire, sparks, etc.) during transit, storage or product application. Consult the product label and/or the PIMA members' Material Safety Data Sheets (MSDS) for specific safety instructions. In the United States, follow all regulations from OSHA, NFPA and local fire authorities; in Canada, follow all regulations from Health Canada Occupational Health and Safety Act (WHMIS) and local fire authorities.

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



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