

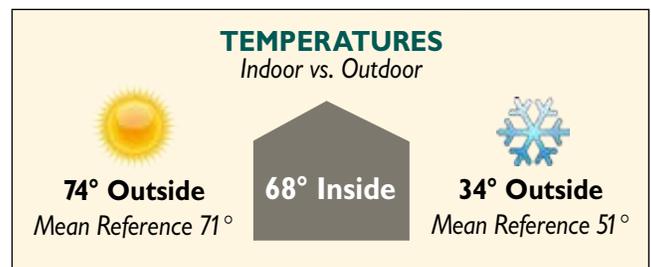
R-VALUES AND MEAN TEMPERATURE

R-Value is the most common measurement tool used in the building construction industry to evaluate resistance to heat flow. The higher the product's R-Value measurement, the greater the insulating value.

All North American manufacturers of building thermal insulation report the R-Value of their products in accordance with several important industry standards. The R-Values of all building thermal insulation products are tested and reported using a uniform mean reference temperature of 75°F (24°C), which is cited in both ASTM (United States) and CAN/ULC (Canada) standards. The use of a uniform 75°F mean reference temperature has long been mandated by the U.S. Federal Trade Commission (FTC) in its regulations for all insulation products marketed to consumers.

It is important to note, mean temperature is not synonymous with ambient temperature/outdoor temperature.

- *Mean reference temperature* is the average between the temperature on the outside of the roof and the temperature on the inside of the roof.
- *Ambient temperature* is the outside temperature.



Attempts to redirect conversation toward R-Values at different mean temperature are often misleading and confusing, which is why the FTC established the 75 degree mean temperature requirement.

EX: *If the mean ambient temperature during the winter heating season for a given location is 34° F and the indoor design temperature is 68°F, then the appropriate winter heating mean reference temperature for thermal testing would be $[(34° + 68°) / 2]$, or 51°F. In a similar manner, if the mean outdoor ambient temperature during the summer air conditioning season for a given location is 74° F and the indoor design temperature is 68° F, the appropriate summer air conditioning mean reference temperature for thermal testing would be $[(74° + 68°) / 2]$ or 71°F.*

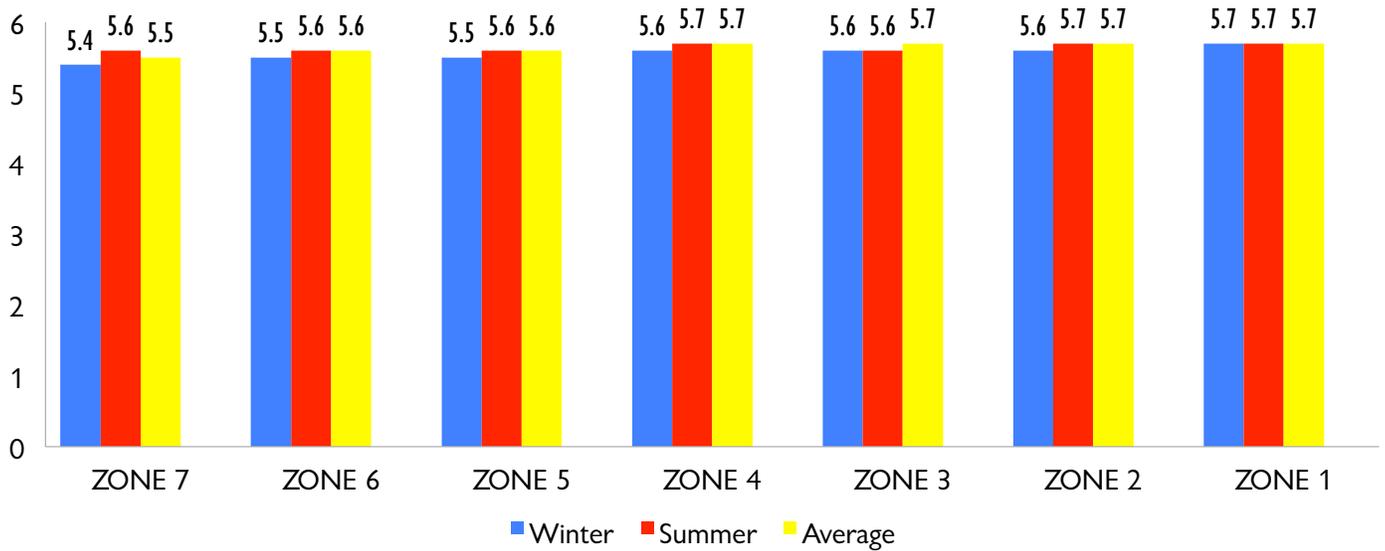
What is the Polyiso Roof insulation R –Value per inch for your climate zone?

Using the average polyiso roof insulation R-Value data reported in the 2010 NRCA study, PIMA calculated the temperature-related R-Value for each of the seven ASHRAE climate zones based on three different conditions:

1. Average R-Value during the winter heating season
2. Average R-value during the summer air conditioning season
3. Average R-value for the entire year

Evaluating the information nationally, the average mean low temperatures for areas across the US are above 50 degrees mean, and the average mean high temperatures range from above 60 degrees mean into the upper 70's depending on geographic region. Thusly, it is important to understand the definition of mean temperature in terms of R-Value calculation. Redirection of conversation away from FTC mandated R-Value measurements is a deliberate attempt to mislead and confuse, which could result in improperly insulated buildings.

THREE AVERAGE R-VALUE CALCULATIONS FOR EACH CLIMATE ZONE



ENERGY CODE CLIMATE ZONES

