

DETERMINING MINIMUM R-VALUES ON TAPERED INSULATION SYSTEMS

According to the 2015 International Energy Conservation Code (IECC), under Insulation Requirements, the building thermal envelope shall meet the requirements of Tables C402.2 based on the climate zones shown below:

CLIMATE ZONE	1	2	3	4	5	6	7	8
Insulation Entirely Above Deck	R-20ci	R-25ci	R-25ci	R-30ci	R-30ci	R-30ci	R-35ci	R-35ci

Question: How does this affect R-Values on a Tapered Insulation System?

Answer: The R-Values shown above are the minimum R-Values required to meet Code requirements. Since a Tapered Insulation system will increase thickness away from the low points, the overall system R-Value will exceed the Prescriptive R-Value requirements.

Question: Does an Average R-Value that meets the Prescriptive requirement satisfy Code standards?

Answer: No. The terminology "Average R-Value" for tapered systems is an outdated term and not recognized by the IECC. There is an exception provided that allows the minimum thickness to be up to 1" less than the prescriptive R-Value (at 1/4" per foot slope) as long as the system R-Value meets or exceeds that Prescriptive R-Value.

Example: Zone 6 requires an R=30 minimum, which is 5.2" thick. This exception will allow the minimum thickness to be 4.2" at the low point, or 5.2", 4' away from the drain on a 1/4" per foot tapered system.

IECC 2015, SEC. C402.2 ROOF ASSEMBLY EXCEPTION 2 ALLOWS A 1-INCH INSULATION THICKNESS VARIATION

