

Roofing No. 3011

Subject: R-value and Long Term R-value - Polyisocyanurate Insulation

Date: January 2008 (Revised January 2019)

Manufacturers of Polyisocyanurate insulation are promoting the use of the long term R-value techniques in ASTM C1303 and CAN/ULC S770. The Polyisocyanurate Insulation Manufacturers Association, PIMA, is promoting using some form of time weighted average over 15 years¹. Their literature states that “using techniques in ASTM C1303, CAN/ULC S770” provides the following long term R-values for some Polyisocyanurate insulations.

The R-value published by polyisocyanurate insulation manufacturers is ONLY for 5 years.

The long term R-value for polyisocyanurate insulations is LOWER than that represented by the PIMA published information.

¹ Refer to Polyiso Performs - PIMA (Polyisocyanurate Insulation Manufacturers Association) - 2002

Average LTTR Values for Polyiso with Hydrocarbon Blowing Agents ¹	
POLYISO THICKNESS (inches)	LTTR R-VALUE
1	6.0
2	12.1
3	18.5
4	25.0

The exact variations from the standard test methods are not described. As is well known, deviations from standard test methods make the results unreliable for comparison.

Although this is a step forward for the Polyisocyanurate insulation industry to recognize that estimates of long term R-value, the use of their ‘modified’ test method only allows for Polyisocyanurate insulation manufacturers to compare performance among Polyisocyanurate insulations. The use of the modified PIMA method DOES NOT provide for determination of a long term R-value, such as after 50 years. The PIMA method only provides for the determination of the R-value after 5 years.