OWENS CORNING WORLD HEADQUARTERS
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June 6, 2013

Re: Adding Thermal Values

City of Arlington:

The thermal resistance of a building material is designated by a R-value. This is a measure of the ability to retard heat flow. The use of R-values makes it possible to add the thermal value of a whole series of materials, air films, and air spaces so that the total R-value for a composite building section can be determined. Since R-value indicates the ability to retard heat flow, the higher the R-value the higher the insulating value. All materials having the same R-value, regardless of thickness, weight, or appearance, are equal in insulating value.

For example, two layers of R-11 at a total of 7.0" thick will achieve a total R-value of 22. With no compression the full value of each batt can be added. In a ceiling application like described adding an R-13 to and R-30 with no compression will have an R-value of R-43. ½" compression will have minimal effect on overall R-value.

The R-value for this combination should be about R-42. An example to base this on is that R-19 is 6.25". When compressed into a 5.5" cavity it still has an R-value of R-18. That is a ¾" compression that loses R-1 for the thermal value.

Should you have any additional questions, please contact the GETTECH Team at 419-248-6557 or email GETTECH@owenscorning.com.

Respectfully,

Marc Keenan
Sr. Product Specialist
Owens Corning