

**5.4.4 Thermal Performance of Insulation**

	<u>R-Value per Inch (1)</u>			<u>R-Value per Inch (1)</u>
Fiberglass (2)			Perlite/Vermiculite	
Batts	3.1 - 4.3	(3)	Loose-Fill	2.1 - 3.7
Loose-Fill	2.5 - 3.7		Foam Boards	
Spray-Applied	3.7 - 3.9		Expanded Polystyrene	3.9 - 4.4
Rock Wool (2)			Polyisocyanurate/ Polyurethane	5.6 - 7.0
Loose-Fill	2.5 - 3.7		Phenolic	4.4 - 8.2
Cellulose			Reflective Insulation	2 - 17
Loose-Fill	3.1 - 3.7		Vacuum Powder Insulation	25 - 30
Spray-Applied	2.9 - 3.5		Vacuum Insulation Panel	20 - 100

Note(s): 1) Hr-ft<sup>2</sup>-F/Btu-in. Does not include the effects of aging and settling. 2) Mineral fiber. 3) System R-value depends on heat-flow direction and number of air spaces.

Source(s): ASHRAE, 1997 ASHRAE Handbook: Fundamentals, p. 24-4, 22-5; DOE, Insulation Fact Sheet, Jan 1988, p. 6; Journal of Thermal Insulation, 1987, p. 81-95; ORNL, ORNL/SUB/88-SA835/1, 1990; ORNL, Science and Technology for a Sustainable Energy Future, March 1995, p. 17; and ORNL for vacuum insulation panel.