Conductance and Resistance Values for Internal Air Surfaces

				Type of Surface					
				Foil and Nonreflective Building Materials		Aluminum-Coated Paper and Nonreflective Building Materials		Both Surfaces Nonreflective Building Materials	
Position of Air Space	Direction of Heat Flow[a]	Thickness (in.)	Temp. Coad.	Conductance *C*, Btu/(h) (ft²) (°F)	Resistance *R*, 1/[Btu/(h) (ft²) (°F)³	Conductance *C*, Btu/(h) (ft²) (°F)	Resistance *R*, 1/[Btu/(h) (ft²) (°F)³	Conductance *C*, Btu/(h) (ft²) (°F)	Resistance, *R*, 1/[Btu/(h) (ft²) (°F)]
Horizontal	Up	3	W	0.45	2.23	0.59	1.71	1.15	0.87
		4							
		3	S	0.44	2.26	0.61	1.63	1.32	0.76
		4							
		4	W	0.37	2.73	0.50	1.99	1.07	0.94
		4	S	0.36	2.75	0.53	1.87	1.24	0.80
45° slope	Up	3	W	0.36	2.78	0.50	2.02	1.06	0.94
		4							
		3	S	0.36	2.81	0.53	1.90	1.24	0.81
		4							
		4	W	0.33	3.00	0.47	2.13	1.04	0.96
		4	S	0.33	3.00	0.51	1.98	1.21	0.82
Vertical	Horizontal	3	W	0.29	3.48	0.42	2.36	0.99	1.01
		4							
		3	S	0.31	3.28	0.48	2.10	1.19	0.84
		4							
		4	W	0.29	3.45	0.43	2.34	0.99	1.01
		4	S	0.29	3.44	0.46	2.16	1.17	0.91

45° slope	Down	3	W	0.28	3.57	0.42	2.40	0.98	1.02
		4							
		3	S	0.31	3.24	0.48	2.09	1.19	0.84
		4							
		4		0.23	4.41	0.36	2.75	0.93	1.08
		4		0.23	4.36	0.40	2.50	1.11	0.90
Horizontal	Down	$\frac{3}{1}$	W	0.28	3.55	0.42	2.39	0.98	1.02
		$1\frac{1}{2}$	S	0.17	5.74	0.31	3.21	0.88	1.14
		4	W	0.11	8.94	0.25	4.02	0.81	1.23
		$\frac{3}{4}$	S	0.31	3.25	0.48	2.08	1.19	0.84
		$1\frac{1}{2}$	S	0.19	5.24	0.36	2.76	1.07	0.93
		4	S	0.12	8.08	0.30	3.38	1.01	0.99

Source: Courtesy of Johns-Manville, Denver, CO.

Note: W, winter; S, summer.

[a] Heat flows from hot to cold. For ceiling instillation, the direction of heat flow would normally be "up" for winter and "down" for summer. In a floor the direction of heat flow would be "down" in winter and "up" in summer. Heat flow in walls would be in a horizontal direction.