

HEATING VENTILATING AIR CONDITIONING GUIDE 1939

TABLE 2. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATORS—Continued

The coefficients are expressed in Btu per hour per square foot per degree Fahrenheit per 1 in. thickness unless otherwise indicated.

Material	Description	Density (Lb per Cu Ft)	MEAN TEMP (DEG FAHR)	Conductivity (<i>k</i>) or Conductance (<i>C</i>)	Resistance ($\frac{1}{k}$) or Resistance ($\frac{1}{C}$)	AUTHORITY
AIR SPACES FACED WITH BRIGHT ALUMINUM FOIL	Air space, faced one side with bright aluminum foil, over $\frac{1}{4}$ -in. wide.	—	50	0.46†*	2.17	(4)
	Air space, faced one side with bright aluminum foil, $\frac{1}{4}$ -in. wide.	—	50	0.62†	1.61	(4)
	Air space, faced both sides with bright aluminum foil, over $\frac{1}{4}$ -in. wide.	—	50	0.41†*	2.44	(4)
	Air space, faced both sides with bright aluminum foil, $\frac{1}{4}$ -in. wide.	—	50	0.57†	1.75	(4)
	Air space divided in two with single curtain of bright aluminum foil (both sides bright) each space over $\frac{1}{4}$ -in. wide.	—	50	0.23†*	4.35	(4)
	each space $\frac{1}{4}$ -in. wide.	—	50	0.31†	3.23	(4)
	Air space with multiple curtains of bright aluminum foil, bright on both sides, curtains more than $\frac{1}{4}$ -in. apart, air circulation between spaces prevented:					
	2 curtains, forming 3 spaces.	—	50	0.15†*	6.78	(4)
	3 curtains, forming 4 spaces.	—	50	0.11†*	9.22	(4)
	4 curtains, forming 5 spaces.	—	50	0.09†*	11.66	(4)
SPACES FACED WITH NON-METALLIC REFLECTIVE SURFACE	Fabric with non-metallic reflective surface ($\frac{1}{4}$ in. thick) placed in center of a $1\frac{1}{4}$ in. air space.	—	70	0.33†	3.03	(3)
	Core of fiber board coated two sides with non-metallic reflective surface ($\frac{1}{4}$ in. thick) placed in space having approximately $\frac{1}{4}$ in. air space on each side.	23.4	70	0.27†	3.70	(3)
	Fiber board coated one side with non-metallic reflective surface ($\frac{1}{4}$ in. thick) placed in space having approximately $\frac{1}{4}$ in. air space on each side.	—	75	0.49†	2.04	(3)
	Air space divided in two with fabric faced both sides with non-metallic reflective surface, each space over $\frac{1}{4}$ -in. wide.	—	40	0.33†	3.03	(4)
	Air space over $\frac{1}{4}$ -in. wide faced one side with non-metallic reflective surface.	—	40	0.67†	1.49	(4)
WOODS (Across Grain)	BALSA	20.0	90	0.58	1.72	(1)
		8.8	90	0.38	2.63	(1)
		7.3	90	0.33	3.03	(1)
CALIFORNIA REDWOOD	0% moisture.	22.0	75	0.66	1.53	(4)
	8% "	28.0	75	0.70	1.43	(4)
	8% "	22.0	75	0.70	1.43	(4)
	8% "	28.0	75	0.75	1.33	(4)
	16% "	22.0	75	0.74	1.35	(4)
CYPRESS	0% moisture.	28.0	75	0.80	1.25	(4)
	8% "	28.0	86	0.67	1.49	(1)
	16% "	26.0	75	0.61	1.64	(4)
DOUGLAS FIR	0% moisture.	34.0	75	0.67	1.49	(4)
	8% "	26.0	75	0.66	1.52	(4)
	8% "	34.0	75	0.75	1.33	(4)
	16% "	26.0	75	0.76	1.32	(4)
	16% "	34.0	75	0.82	1.22	(4)
EASTERN HEMLOCK	0% moisture.	22.0	75	0.60	1.67	(4)
	8% "	30.0	75	0.76	1.32	(4)
	8% "	22.0	75	0.63	1.59	(4)
	16% "	30.0	75	0.81	1.23	(4)
	16% "	22.0	75	0.67	1.49	(4)
HARD MAPLE	0% moisture.	30.0	75	0.85	1.18	(4)
	8% "	40.0	75	1.01	0.99	(4)
	8% "	46.0	75	1.05	0.95	(4)
	16% "	40.0	75	1.08	0.93	(4)
	16% "	46.0	75	1.13	0.89	(4)
		40.0	75	1.15	0.87	(4)
		46.0	75	1.21	0.83	(4)

For notes see Page 95.

CHAPTER 5. HEAT TRANSMISSION COEFFICIENTS AND TABLES

TABLE 2. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATORS—Concluded

The coefficients are expressed in Btu per hour per square foot per degree Fahrenheit per 1 in. thickness unless otherwise indicated.

Material	Description	Density (Lb per Cu Ft)	MEAN TEMP (DEG FAHR)	Conductivity (<i>k</i>) or Conductance (<i>C</i>)	Resistance ($\frac{1}{k}$) or Resistance ($\frac{1}{C}$)	AUTHORITY
WOODS—Continued LONGLEAF YELLOW PINE	0% moisture.	30.0	75	0.76	1.32	(4)
	8% "	40.0	75	0.86	1.16	(4)
	8% "	30.0	75	0.83	1.21	(4)
	8% "	40.0	75	0.95	1.05	(4)
	16% "	30.0	75	0.89	1.12	(4)
	16% "	40.0	75	1.03	0.97	(4)
	16% "	34.3	86	0.90	1.11	(1)
MAHOGANY		44.3	86	1.10	0.91	(1)
				1.15*	0.87	(1)
				1.15*	0.87	(1)
MAPLE MAPLE OR OAK NORWAY PINE	0% moisture.	22.0	75	0.62	1.61	(4)
	0% "	32.0	75	0.74	1.35	(4)
	8% "	22.0	75	0.68	1.47	(4)
	8% "	32.0	75	0.83	1.21	(4)
	16% "	22.0	75	0.74	1.35	(4)
RED CYPRESS	0% moisture.	32.0	75	0.91	1.10	(4)
	0% "	22.0	75	0.67	1.49	(4)
	8% "	32.0	75	0.79	1.27	(4)
	8% "	22.0	75	0.71	1.41	(4)
	16% "	32.0	75	0.84	1.19	(4)
RED OAK	0% moisture.	22.0	75	0.74	1.35	(4)
	0% "	32.0	75	0.90	1.11	(4)
	8% "	38.0	75	0.98	1.02	(4)
	8% "	48.0	75	1.18	0.85	(4)
	16% "	38.0	75	1.03	0.97	(4)
SHORTLEAF YELLOW PINE	0% moisture.	48.0	75	1.24	0.81	(4)
	0% "	38.0	75	1.07	0.94	(4)
	8% "	48.0	75	1.29	0.78	(4)
	8% "	26.0	75	0.74	1.35	(4)
	16% "	36.0	75	0.91	1.10	(4)
SOFT ELM	0% moisture.	26.0	75	0.79	1.27	(4)
	0% "	36.0	75	0.97	1.03	(4)
	8% "	26.0	75	0.84	1.19	(4)
	8% "	36.0	75	1.04	0.96	(4)
	16% "	28.0	75	0.73	1.37	(4)
SOFT MAPLE	0% moisture.	34.0	75	0.88	1.14	(4)
	0% "	28.0	75	0.77	1.30	(4)
	8% "	34.0	75	0.93	1.08	(4)
	8% "	28.0	75	0.81	1.24	(4)
	16% "	34.0	75	0.97	1.03	(4)
SUGAR PINE	0% moisture.	36.0	75	0.89	1.12	(4)
	0% "	42.0	75	0.95	1.05	(4)
	8% "	36.0	75	0.96	1.04	(4)
	8% "	42.0	75	1.02	0.98	(4)
	16% "	36.0	75	1.01	0.99	(4)
WEST COAST HEMLOCK	0% moisture.	42.0	75	1.09	0.92	(4)
	0% "	22.0	75	0.54	1.85	(4)
	8% "	28.0	75	0.64	1.56	(4)
	8% "	22.0	75	0.59	1.70	(4)
	16% "	28.0	75	0.71	1.41	(4)
VIRGINIA PINE	0% moisture.	22.0	75	0.65	1.54	(4)
	0% "	28.0	75	0.78	1.28	(4)
	8% "	34.3	86	0.96	1.04	(1)
	8% "	22.0	75	0.68	1.47	(4)
	16% "	30.0	75	0.79	1.27	(4)
WHITE PINE	0% moisture.	22.0	75	0.73	1.37	(4)
	0% "	30.0	75	0.85	1.18	(4)
	8% "	22.0	75	0.78	1.28	(4)
	8% "	30.0	75	0.91	1.10	(4)
	16% "	31.2	86	0.78	1.28	(1)
YELLOW PINE OR FIR		—	—	1.00	1.00	(3)
		—	—	0.80*	1.25	(—)

For notes see Page 95.