

HEATING VENTILATING AIR CONDITIONING GUIDE 1943

TABLE 2. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATORS^a—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>)	RESISTIVITY OR RESISTANCE ($\frac{1}{k}$ or $\frac{1}{C}$)	AUTHORITY
INSULATION—RIGID CORKBOARD	Typical	—	—	0.30*	3.33	(1)
	No added binder	14.00	90	0.34	2.94	(1)
	" " "	10.60	90	0.30	3.33	(1)
	" " "	7.00	90	0.27	3.70	(1)
	" " "	5.40	90	0.25	4.00	(1)
	Asphaltic binder	14.50	90	0.32	3.12	(1)
	Typical	—	—	0.33*	3.03	(1)
	Chemically treated hog hair covered with film of asphalt	10.00	75	0.28	3.57	(3)
	Made from corn stalks	15.00	71	0.33	3.03	(3)
	" " exploded wood fibers	17.90	78	0.32	3.12	(4)
FIBER	" " "	15.20	70	0.32	3.12	(3)
	Insulating plaster 9/10 in. thick applied to ¼ in. plasterboard base	54.00	75	1.07†	0.93	(3)
	Made from licorice roots	16.10	81	0.34	2.94	(3)
	" " 85% magnesia and 15% asbestos	19.30	86	0.51	1.96	(1)
	" " shredded wood and cement	24.20	72	0.46	2.17	(3)
	" " sugar cane fiber	13.50	70	0.33	3.03	(3)
	Sugar cane fiber insulation blocks encased in asphalt membrane	13.80	70	0.30	3.33	(3)
	Made from wheat straw	17.00	68	0.33	3.03	(3)
	" " wood fiber	15.90	72	0.33	3.03	(3)
	" " " "	15.00	70	0.33	3.03	(3)
INSULATION—REFLECTIVE BUILDING BOARDS	See Table 1, Section C	—	—	—	—	—
	Asbestor	123.00	86	2.70	0.37	(1)
	Corrugated asbestos board	20.40	110	0.48	2.08	(2)
	Pressed asbestos mill board	60.50	86	0.84	1.19	(1)
	Gypsum between layers of heavy paper	62.80	70	1.41	0.71	(3)
	Rigid, gypsum between layers of heavy paper (¾ in. thick)	53.50	90	2.60†	0.38	(1)
	Gypsum mixed with sawdust between layers of heavy paper (0.39 in. thick)	60.70	90	3.60†	0.28	(1)
	(½ in.)	—	—	3.73†	0.27	(1)
	(½ in.)	—	—	2.82†	0.35	(1)
	PLASTERBOARD	—	—	—	—	—
ROOFING CONSTRUCTION	Asphalt, composition or prepared	70.00	75	6.50†	0.15	(3)
	Built up—¾ in. thick	—	—	3.53†	0.28	(1)
	Built up, bitumen and felt, gravel or slag surfaced	—	—	1.33	0.75	(2)
	Plasterboard, gypsum fiber concrete and 3-ply roof covering 2½ in. thick	52.40	76	0.58†	1.72	(4)
	Asbestos	65.00	75	6.00†	0.17	(3)
	Asphalt	70.00	75	6.50†	0.15	(3)
	Slate	201.00	—	10.37†	0.10	(7)
	Wood	—	—	1.28†	0.78	(1)
	SHINGLES	—	—	—	—	—
	PLASTERING MATERIALS	—	—	—	—	—
PLASTER	Cement	—	—	8.00*	0.13	(2)
	Gypsum, typical	—	—	3.30*	0.30	(3)
	Gypsum and expanded vermiculite mix 4 to 1	39.9	75	0.85	1.18	(3)
	Thickness ¾ in.	—	73	8.80†	0.11	(4)
	Total thickness ¾ in.	—	—	4.40†	0.23	(4)
	¾ in. plaster, total thickness ¾ in.	—	70	2.50†	0.40	(4)
	METAL LATH AND PLASTER	—	—	—	—	—
	WOOD LATH AND PLASTER	—	—	—	—	—
	BUILDING CONSTRUCTIONS	—	—	—	—	—
	FRAME	—	—	—	—	—
BUILDING CONSTRUCTIONS	1-in. fir sheathing and building paper	—	30	0.86†	1.16	(4)
	1-in. fir sheathing, building paper, and yellow pine lap siding	—	20	0.50†	2.00	(4)
	1-in. fir sheathing, building paper and stucco	—	20	0.82	1.22	(4)
	Pine lap siding and building paper—siding 4 in. wide	—	16	0.85†	1.18	(4)
	Yellow pine lap siding	—	—	1.28†	0.78	(1)
	—	—	—	—	—	—
	—	—	—	—	—	—
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For notes see Page 97.

CHAPTER 4. HEAT TRANSMISSION COEFFICIENTS

TABLE 2. CONDUCTIVITIES (*k*) AND CONDUCTANCES (*C*) OF BUILDING MATERIALS AND INSULATORS^a—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>)	RESISTIVITY OR RESISTANCE ($\frac{1}{k}$ or $\frac{1}{C}$)	AUTHORITY
BUILDING CONSTRUCTIONS (Continued)	Maple—across grain	40.00	75	1.20	0.83	(3)
	Battleship linoleum (¾ in.)	—	—	1.36†	0.74	(1)
FLOORING	—	—	—	—	—	—
	—	—	—	—	—	—
WOODS (Across Grain)	—	—	—	—	—	—
	—	—	—	—	—	—
BALSA	—	20.0	90	0.58	1.72	(1)
	—	8.8	90	0.38	2.63	(1)
CALIFORNIA REDWOOD	—	7.3	90	0.33	3.03	(1)
	0% moisture	22.0	75	0.66	1.53	(4)
CYPRRESS	—	28.0	75	0.70	1.43	(4)
	0% moisture	22.0	75	0.74	1.35	(4)
DOUGLAS FIR	—	28.0	75	0.80	1.25	(4)
	0% moisture	28.7	86	0.67	1.49	(1)
EASTERN HEMLOCK	—	26.0	75	0.61	1.64	(4)
	0% moisture	34.0	75	0.67	1.49	(4)
HARD MAPLE	—	26.0	75	0.76	1.32	(4)
	0% moisture	34.0	75	0.82	1.22	(4)
LONGLEAF YELLOW PINE	—	22.0	75	0.60	1.67	(4)
	0% moisture	30.0	75	0.76	1.32	(4)
MAHOGANY	—	22.0	75	0.67	1.49	(4)
	0% moisture	30.0	75	0.85	1.18	(4)
MAPLE OR OAK	—	40.0	75	1.01	0.99	(4)
	0% moisture	46.0	75	1.05	0.95	(4)
NORWAY PINE	—	40.0	75	1.15	0.87	(4)
	0% moisture	46.0	75	1.21	0.83	(4)
RED CYPRRESS	—	30.0	75	0.76	1.32	(4)
	0% moisture	40.0	75	0.86	1.16	(4)
RED OAK	—	30.0	75	0.89	1.12	(4)
	0% moisture	40.0	75	1.03	0.97	(4)
SHORTLEAF YELLOW PINE	—	34.3	86	0.90	1.11	(1)
	0% moisture	44.3	86	1.10	0.91	(1)
SOFT ELM	—	—	—	1.15*	0.87	(1)
	0% moisture	22.0	75	0.62	1.61	(4)
SOFT MAPLE	—	32.0	75	0.74	1.35	(4)
	0% moisture	22.0	75	0.74	1.35	(4)
SUGAR PINE	—	32.0	75	0.91	1.10	(4)
	0% moisture	22.0	75	0.67	1.49	(4)
VIRGINIA PINE	—	22.0	75	0.79	1.27	(4)
	0% moisture	22.0	75	0.74	1.35	(4)
WEST COAST HEMLOCK	—	32.0	75	0.90	1.11	(4)
	0% moisture	38.0	75	0.98	1.02	(4)
WHITE PINE	—	48.0	75	1.18	0.85	(4)
	0% moisture	38.0	75	1.07	0.94	(4)
YELLOW PINE OR FIR	—	48.0	75	1.29	0.78	(4)
	0% moisture	26.0	75	0.74	1.35	(4)
—	—	36.0	75	0.91	1.10	(4)
	0% moisture	26.0	75	0.84	1.19	(4)
—	—	36.0	75	1.04	0.96	(4)
	0% moisture	28.0	75	0.73	1.37	(4)
—	—	34.0	75	0.88	1.14	(4)
	0% moisture	28.0	75	0.81	1.24	(4)
—	—	34.0	75	0.97	1.03	(4)
	0% moisture	36.0	75	0.89	1.12	(4)
—	—	42.0	75	0.95	1.05	(4)
	0% moisture	36.0	75	1.01	0.99	(4)
—	—	42.0	75	1.09	0.92	(4)
	0% moisture	22.0	75	0.54	1.85	(4)
—	—	28.0	75	0.54	1.56	(4)
	0% moisture	22.0	75	0.65	1.54	(4)
—	—	28.0	75	0.78	1.28	(4)
	0% moisture	34.3	86	0.96	1.04	(1)
—	—	22.0	75	0.68	1.47	(4)
	0% moisture	30.0	75	0.79	1.27	(4)
—	—	22.0	75	0.78	1.28	(4)
	0% moisture	30.0	75	0.91	1.10	(4)
—	—	31.2	86	0.78	1.28	(1)
	0% moisture	—	—	1.00	1.00	(3)
—	—	—	—	0.80*	1.25	(1)
	—	—	—	—	—	—

For notes see Page 97.