TABLE 5. CONDUCTIVITIES (k) AND CONDUCTANCES (C) USED IN CALCULATING HEAT TRANSMISSION COEFFICIENTS (U) IN TABLES 6 TO 19

These constants are expressed in Btu per (hour) (square foot) (Fahrenheit degree temperature difference). Conductivities (k) are per inch thickness and conductances (C) are for thickness or construction stated, not per inch thickness

Material	Description	Conductivity or Conductance (k)	Conductivity or Conductance (C)	Resistance Per Inch Thickness $\left(\frac{1}{k}\right)$	Resistance For Thickness Listed $\left(\frac{1}{C}\right)$
AIR SPACES					
Bounded by Ordinary Materials	Vertical[a], 3/4 in. or more in width	—	1.10	—	0.91
Bounded by Aluminum Foil	Vertical[a], 3/4 in. or more in width	—	0.46	—	2.17
EXTERIOR FINISHES (Frame Walls)					
Brick Veneer	4 in. thick (nominal)	—	2.27	—	0.44
Stucco (1 in.)		12.50	—	0.08	—
Wood Shingles		—	1.28	—	0.78
Yellow Pine Lap Siding		—	1.28	—	0.78
INSULATING MATERIALS					
Aluminum Foil	See Air Spaces	—	—	—	—
Bats and Blankets	Made from mineral or vegetable fiber or animal hair, enclosed or open	0.27	—	3.70	—
Corkboard	Pure, no added binder	0.30	—	3.33	—
Insulating Board	Vegetable fiber	0.33	—	3.03	—
Mineral Wool	Fiber made from rock, slag or glass	0.27	—	3.70	—
Vermiculite	Expanded	0.48	—	2.08	—
INTERIOR FINISHES					
Composition Wallboard	3/16 in. to 1/2 in. thick	0.50	—	2.00	—
Gypsum Plaster		3.30	—	0.30	—
Gypsum Board (3/8 in.)	Plain or decorated	—	3.70	—	0.27
Gypsum Lath (3/8 in.) and Plaster	Plaster thickness assumed 1/2 in.	—	2.4	—	0.42
Insulating Board (1/2 in.)	Plain or decorated	—	0.66	—	1.52
Insulating Board Lath (1/2 in.) and Plaster	Plaster thickness assumed 1/2 in.	—	0.60	—	1.67
Insulating Board Lath (1 in.) and Plaster	Plaster thickness assumed 1/2 in.	—	0.31	—	3.18
Metal Lath and Plaster	Plaster thickness assumed 3/4 in.	—	4.40	—	0.23
Plywood (3/8 in.)	Plain or decorated	—	2.12	—	0.47
Wood Lath and Plaster		—	2.50	—	0.40
MASONRY MATERIALS					
Brick	Adobe, assumed 4 in. thick	—	0.89	—	1.12
Brick	Common, assumed 4 in. thick	—	1.25	—	0.80
Brick	Face, assumed 4 in. thick	—	2.30	—	0.43
Cement Mortar		12.00	—	0.08	—
3 in. Clay Tile (Hollow)		—	1.28	—	0.78
4 in. Clay Tile (Hollow)		—	1.00	—	1.00
6 in. Clay Tile (Hollow)		—	0.64	—	1.57
8 in. Clay Tile (Hollow)		—	0.60	—	1.67
10 in. Clay Tile (Hollow)		—	0.58	—	1.72
12 in. Clay Tile (Hollow)		—	0.40	—	2.50
16 in. Clay Tile (Hollow)		—	0.31	—	3.23
Concrete	Light weight aggregate[b]	2.50	—	0.40	—
Concrete	Sand and gravel aggregate	12.00	—	0.08	—
3 in. Concrete Blocks	Hollow, cinder aggregate	—	1.28	—	0.78
4 in. Concrete Blocks	Hollow, cinder aggregate	—	1.00	—	1.00
8 in. Concrete Blocks	Hollow, gravel aggregate	—	1.00	—	1.00
12 in. Concrete Blocks	Hollow gravel aggregate	—	0.80	—	1.25
8 in. Concrete Blocks	Hollow, cinder aggregate	—	0.60	—	1.66
12 in. Concrete Blocks	Hollow, cinder aggregate	—	0.53	—	1.88
8 in. Concrete Blocks	Hollow, light weight aggregate	—	0.50	—	2.00
12 in. Concrete Blocks	Hollow, light weight aggregate[b]	—	0.47	—	2.13
Gypsum Fiber Concrete	87 1/2 percent gypsum and 12 1/2 percent wood chips	1.66	—	0.60	—
3 in. Gypsum Tile	Hollow	—	0.61	—	1.64
4 in. Gypsum Tile	Hollow	—	0.46	—	2.18
Stucco		12.50	—	0.08	—
Tile and Terrazzo	For flooring	12.00	—	0.08	—
Stone		12.50	—	0.08	—

[a] Conductance values for horizontal air spaces depend on whether the heat flow is upward or downward, but in most cases it is sufficiently accurate to use the same values for horizontal as for vertical air spaces.

[b] Expanded slag, burned clay or pumice.

TABLE 5. CONDUCTIVITIES (k) AND CONDUCTANCES (C) USED IN CALCULATING HEAT TRANSMISSION COEFFICIENTS (U) IN TABLES 6 TO 19

These constants are expressed in Btu per (hour) (square foot) (Farhenheit degree temperature difference.) Conductivities (k) are per inch thickness and conductances (C) are for thickness or construction stated, not per inch thickness

Material	Description	Conductivity or Conductance (k)	Conductivity or Conductance (C)	Resistance Per Inch Thickness $\left(\frac{1}{k}\right)$	Resistance For Thickness Listed $\left(\frac{1}{C}\right)$
ROOFING MATERIALS					
Asbestos Shingles		—	6.00	—	0.17
Asphalt Shingles		—	6.50	—	0.15
Built-up Roofing	Assumed thickness 3/8 in.	—	3.53	—	0.28
Heavy Roll Roofing		—	6.50	—	0.15
Slate	Assumed 1/2 in.	10.00	20.00	0.10	0.05
Wood Shingles		—	1.28	—	0.78
SHEATHING					
Gypsum (1/2 in.)		—	2.82	—	0.35
Insulating Board (25/32 in.)		—	0.42	—	2.37
Plywood (5/16 in.)		—	2.56	—	0.39
Fir or Yellow Pine (1 in.)	Actual thickness 25/32 in.	—	1.02	—	0.98
Fir, Plus Building Paper	Actual thickness 25/32 in.	—	0.86	—	1.16
SURFACES					
Still air	Ordinary non-reflective materials, vertical	—	1.65	—	0.61
15 mph Wind Velocity	Ordinary non-reflective materials, vertical	—	6.00	—	0.17
WOODS					
Fir Sheathing (1 in.) Building Paper and Yellow Pine Lap Siding		—	0.50	—	2.00
Maple or Oak		1.15	—	0.87	—
Yellow Pine or Fir		0.80	—	1.25	—

and wall temperatures. The possibility of change in emissivity with time of exposure due to surface coatings, chemical action, deposition of dust, etc., must be considered in selecting a material for use.[10]

PRACTICAL COEFFICIENTS AND THEIR USE

For practical purposes it is necessary to have average coefficients that may be applied to various materials and types or construction without the necessity of making actual tests. In Table 2 coefficients are given for a group of materials which have been selected from tests by various authorities. Since there is some variation in the resulting values due to variations in materials and in test conditions, average values for the usual conditions encountered in building practice have been selected and listed in Table 5. These coefficients were used in the calculation of overall coefficients given in Tables 6 to 19. These tables constitute typical examples of combinations frequently used, but any special constructions not given can be computed by the use of the conductivity or conductance values in Table 2 and the fundamental heat transfer formulas.

Caution

The user should realize that the average conductivity and conductance values given in Tables 2 or 5 do not necessarily apply to all products of the same general description. In using these values, judgment should be exercised with regard to the extent to which the product (either as received or as