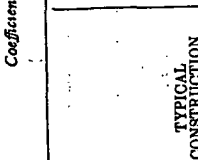
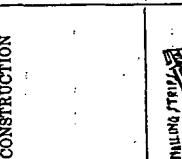
TABLE 12. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS[a]

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on an outside wind velocity of 15 mph.

TYPICAL CONSTRUCTION	TYPE OF ROOFING AND ROOF SHEATHING	INSULATION BETWEEN ROOF RAFTERS	No.	TYPE OF CEILING (APPLIED DIRECTLY TO ROOF RAFTERS)									
				No Ceiling (Rafters Exposed)	Metal Lath and Plaster (¾ in.)	Plasterboard (⅜ in.) and Plaster (½ in.)	Wood Lath and Plaster	Rigid Insulation (½ in.)	Rigid Insulation (½ in.) and Plaster (½ in.)	Rigid Insulation (1 in.) and Plaster (½ in.)	Corkboard (1½ in.) and Plaster (½ in.)	Corkboard (2 in.) and Plaster (½ in.)
				A	B	C	D	E	F	G	H	I
	Wood Shingles on Wood Strips[b]	None	1	0.46	0.30	0.29	0.29	0.22	0.21	0.16	0.12	0.10
		Bright Aluminum Foil[c]	2	.....	0.22	0.21	0.21	0.18	0.17	0.14	0.11	0.089
		1 in. Flexible[c]	3	.....	0.13	0.12	0.12	0.11	0.11	0.092	0.078	0.069
		2 in. Flexible[c]	4	.....	0.086	0.083	0.083	0.076	0.075	0.068	0.060	0.054
		3½ in. Rock Wool[c]	5	.....	0.063	0.062	0.062	0.058	0.058	0.053	0.048	0.044
	Asphalt Shingles, Rigid Asbestos Shingles, Composition Roofing, or Slate or Tile Roofing[d] on Wood Sheathing[f]	None	6	0.56	0.34	0.32	0.32	0.24	0.23	0.17	0.13	0.11
		Bright Aluminum Foil[c]	7	.....	0.24	0.24	0.24	0.19	0.18	0.14	0.11	0.098
		1 in. Flexible[c]	8	.....	0.13	0.13	0.13	0.11	0.11	0.095	0.080	0.071
		2 in. Flexible[c]	9	.....	0.088	0.087	0.087	0.079	0.078	0.070	0.062	0.056
		3½ in. Rock Wool[c]	10	.....	0.065	0.064	0.064	0.060	0.059	0.054	0.049	0.045

[a] Computed from factors marked by [a] in Table 2. Nos. 6 to 10, inclusive, based on ½ in. thick slate.
[b] Based on 1 in. by 4 in. strips spaced 2 in.
[c] Figures based on two air spaces. Insulation may also be applied to under side of roof rafters with furring strips between.
[d] Roofing felt between roof sheathing and slate or tile neglected in calculations.
[e] Assumed 3½ in. thick based on the actual width of 2 in. by 4 in. rafters.
[f] Sheathing assumed ⅝ in. thick.
[g] Air space faced on one side with bright aluminum foil.

$$U = \frac{1}{\frac{1}{6.0} + \frac{4.0}{9.20} + \frac{4.0}{5.0} + \frac{0.5}{3.3} + \frac{1}{1.65}}$$

$$= \frac{1}{0.167 + 0.435 + 0.80 + 0.152 + 0.606}$$

= 0.46 Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides.

The coefficients in the tables were determined by calculations similar to those shown in Example 1, using Fundamental Formulae 3, 4 and 5 and the values of k (or C), f_i, f_o and a indicated in Table 2 by asterisks. In computing heat transmission coefficients of floors laid directly on the ground (Table 10), only one surface coefficient (f_i) is used. For example, the value of U for a 1-in. yellow pine floor (actual thickness, 25/32 in.) placed directly on 6-in. concrete on the ground, is determined as follows:

$$U = \frac{1}{\frac{1}{1.65} + \frac{0.781}{0.80} + \frac{6.0}{12.0}} = 0.48 \text{ Btu per hour per square foot per degree difference}$$

in temperature between the ground and the air immediately above the floor.

TABLE 13. COEFFICIENTS OF TRANSMISSION (U) OF DOORS, WINDOWS, SKYLIGHTS AND GLASS WALLS

Coefficients are based on a wind velocity of 15 mph, and are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air inside and outside of the door, window, skylight or wal

A. Windows and Skylights

DESCRIPTION	U
Single	1.13[a, c]
Double	0.45[a]
Triple	0.281[a]

B. Solid Wood Doors[b, c]

NOMINAL THICKNESS INCHES	ACTUAL THICKNESS INCHES	U EXPOSED DOOR	U[d] WITH GLASS STORM DOOR
1	25/32	0.69	0.42
1¼	1 1/16	0.59	0.38
1½	1 5/16	0.52	0.35
1¾	1 5/8	0.51	0.35
2	1 5/8	0.46	0.32
2½	2 1/8	0.38	0.28
3	2 5/8	0.33	0.25

C. Glass Walls

DESCRIPTION	U
Hollow glass tile wall, 6 x 6 x 2 in. thick blocks, wind velocity 15 mph, outside surface; still air, inside surface	0.60
Still air, outside and inside surface	0.48

[a] See Heating, Ventilating and Air Conditioning, by Harding and Willard, revised edition, 1932.
[b] Computed using $C = 1.15$ for wood; $f_i = 1.65$ and $f_o = 6.0$.
[c] It is sufficiently accurate to use the same coefficient of transmission for doors containing thin wood panels as that of single panes of glass, namely, 1.13 Btu per hour per square foot per degree difference between inside and outside air temperatures.
[d] These values may also be used with sufficient accuracy for wood storm doors. Neglect storm doors if loose and use values for exposed doors.