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.)	Cortboard (1½ in.) and Plaster (½ in.)	Cortboard (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	.....	.....	0.21	.....	.....	.....	.....	.....	.....	
		1 in. Flexible[d]	3	.....	0.13	0.12	0.12	0.11	0.11	0.092	0.078	0.069	
		2 in. Flexible[d]	4	.....	0.086	0.083	0.083	0.076	0.075	0.068	0.060	0.054	
		3½ in. Rock Wool[e]	5	.....	0.070	0.070	0.070	0.064	0.064	0.057	0.052	0.047	
	Asphalt Shingles, Rigid Asbestos Shingles, Composition Roofing, or Slate or Tile Roofing[f] 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	.....	.....	.....	.....	.....	.....	
		1 in. Flexible[d]	8	.....	0.13	0.13	0.13	0.11	0.11	0.095	0.080	0.071	
		2 in. Flexible[d]	9	.....	0.088	0.087	0.087	0.079	0.078	0.070	0.062	0.056	
		3½ in. Rock Wool[e]	10	.....	0.073	0.072	0.072	0.067	0.065	0.059	0.053	0.048	

[a] Computed from factors marked by * 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. These coefficients are corrected for the effect of studs.
[f] Sheathing assumed ⅝ in. thick.
[g] Air space faced on one side with bright aluminum foil applied to plasterboard.

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

Section A. Windows and Skylights

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

Section 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	1⅜	0.51	0.35
2	1⅝	0.46	0.32
2½	2⅛	0.38	0.28
3	2⅝	0.33	0.25

Section C. Hollow Glass Block Walls

DESCRIPTION	U STILL AIR BOTH SIDES	U STILL AIR INSIDE, 15 MPH OUTSIDE
Smooth surface glass blocks 7¾ x 7¾ x 3⅞ in. thick	0.40	0.49
Ribbed surface glass blocks 7¾ x 7¾ x 3⅞ in. thick	0.38	0.46

[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.
[e] Air spaces assumed to be ¾ in. or more in width.

coefficient of transmission of a top floor ceiling, unheated attic space, and pitched roof, per square foot of ceiling area, is as follows:

$$U = \frac{U_r \times U_{ce}}{U_r + \frac{U_{ce}}{n}} \qquad (6)$$

where

U = combined coefficient to be used with ceiling area.
U_r = coefficient of transmission of the roof.
U_{ce} = coefficient of transmission of the ceiling.
n = the ratio of the area of the roof to the area of the ceiling.

In selecting the values to be used for U_r and U_{ce} it should be noted that the under surface of the roof and the upper surface of the ceiling are more nearly equivalent to the boundary surfaces of an internal air space than they are to the external surfaces of a wall. It would be more nearly correct to use a value of 2.2 rather than the usual value of 1.65 as coefficients for these surfaces. In most cases this would make only a minor