

TABLE 12. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS

Coefficients are expressed in Btu 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)									
				A	B	C	D	E	F	G	H	I	
				No Ceiling (Rafters Exposed)	Plaster (1/2 in.) and Lath and Plaster (1/2 in.)	Plasterboard (1/2 in.)	Wood Lath and Plaster	Rigid Insulation (1/2 in.)	Rigid Insulation (1/2 in.) and Plaster (1/2 in.)	Rigid Insulation (1/2 in.)	Corboard (1 1/2 in.) and Plaster (1/2 in.)	Corboard (2 in.) and Plaster (1/2 in.)	
			1	0.46	0.30	0.29	0.29	0.22	0.21	0.16	0.12	0.10	
			2	.....	.....	0.21	.....	.....	.....	.....	.....	.....	
			3	.....	0.13	0.12	0.12	0.11	0.11	0.092	0.078	0.069	
			4	.....	0.080	0.083	0.083	0.076	0.075	0.068	0.060	0.054	
			5	.....	0.070	0.070	0.070	0.064	0.064	0.057	0.052	0.047	
			6	0.56	0.34	0.32	0.32	0.24	0.23	0.17	0.13	0.11	
			7	.....	.....	0.24	.....	.....	.....	.....	.....	.....	
			8	.....	0.13	0.13	0.13	0.11	0.11	0.095	0.080	0.071	
			9	.....	0.088	0.087	0.087	0.079	0.078	0.070	0.062	0.056	
			10	.....	0.073	0.072	0.072	0.067	0.065	0.059	0.053	0.048	

*Computed from factors marked by * in Table 2. Nos. 6 to 10, inclusive, based on 1/2 in. thick slate.

†Based on 1 in. by 4 in. strips spaced 2 in.

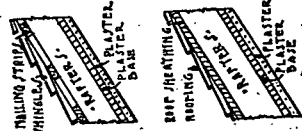
‡Figures based on two air spaces. Insulation may also be applied to under side of roof rafters with furring strips between.

§Roofing felt between roof sheathing and slate or tile neglected in calculations.

||Assumed 3/4 in. thick based on the actual width of 2 in. by 4 in. rafters. These coefficients are corrected for the effect of studs.

¶Sheathing assumed 1/2 in. thick.

|||Air space faced on one side with bright aluminum foil applied to plasterboard.



CHAPTER 4. HEAT TRANSMISSION COEFFICIENTS

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, c}
Triple.....	0.281 ^{a, c}

Section B. Solid Wood Doors^{b, c}

NOMINAL THICKNESS INCHES	ACTUAL THICKNESS INCHES	U	U ^d
		EXPOSED DOOR	WITH GLASS STORM DOOR
1	2 5/8	0.69	0.42
1 1/4	1 1/16	0.59	0.38
1 1/2	1 1/16	0.52	0.35
1 3/4	1 3/8	0.51	0.35
2	1 5/8	0.46	0.32
2 1/2	2 1/8	0.38	0.28
3	2 3/8	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 7 3/4 x 7 3/4 x 3 3/8 in. thick	0.40	0.49 ^b
Ribbed surface glass blocks 7 3/4 x 7 3/4 x 3 3/8 in. thick	0.38	0.46

*See Heating, Ventilating and Air Conditioning, by Harding and Willard, revised edition, 1932.

†Computed using C = 1.15 for wood; f_i = 1.65 and f_o = 6.0.

‡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.

§These values may also be used with sufficient accuracy for wood storm doors. Neglect storm doors if loose and use values for exposed doors.

||Air spaces assumed to be 1/4 in. or more in width.

Basement Floor and Wall Coefficients

The dirt in contact with basement floors and walls below grade has an appreciable insulating value. The exact thickness or depth of the dirt which may contribute to the heat resistance of floors and walls in contact therewith is a variable and indeterminate quantity. Tests at the A.S.H.V.E. Research Laboratory¹ indicate that the rate of heat flow through basement floors, even without insulation, does not exceed 0.10 Btu per square foot per degree Fahrenheit temperature difference between the air above the floor and the soil under the floor at the point of maximum diffusion of the heat from the basement. As indicated in the footnote of Table 10, this coefficient is recommended for use whenever it is desirable

¹A.S.H.V.E. RESEARCH PAPER—Heat Loss Through Basement Walls and Floors, by F. C. Houghten, S. I. Taimuty, Carl Gutberlet and C. J. Brown (A.S.H.V.E. JOURNAL SECTION, Heating, Piping and Air Conditioning, January, 1942, p. 69).