Table 18. Coefficients of Transmission (U) of Windows, Skylights and Glass Block Walls

Coefficients are expressed in Btu per (hour) (square foot) (Fahrenheit degree difference in temperature between the air on the two sides). Those for outdoor exposures are based upon the following outdoor conditions: 0 F air temperature, clear skies, no solar radiation, and 15 mph outdoor wind velocity.

Section A—Vertical Glass Sheets

Number of Sheets	One	Two			Three		
Air space, inches	None	¼	½	1[a]	¼	½	1[a]
Outdoor exposure	1.13	0.61	0.55	0.53	0.41	0.36	0.34
Indoor exposure	0.75	0.50	0.46	0.45	0.38	0.33	0.32

Section B—Horizontal Glass Sheets

	Heat Flow Up				Heat Flow Down			
Number of Sheets	One	Two			One	Two		
Air space, inches	None	¼	½	1[a]	None[b]	¼[c]	½	1[a]
Outdoor exposure	1.40	0.70	0.66	0.63				
Indoor exposure	0.96	0.59	0.56	0.56	0.60	0.43	0.39	0.38

Section C—Walls of Hollow Glass Block

Description	Outdoor Exposure	Indoor Partition
5¾ x 5¾ x 3⅞ in. thick	0.60	0.46
7¾ x 7¾ x 3⅞ in. thick	0.56	0.44
11¾ x 11¾ x 3⅞ in. thick	0.52[d]	0.40
7¾ x 7¾ x 3⅞ in. thick with glass fiber dividing the cavity	0.48	0.38
11¾ x 11¾ x 3⅞ in. thick with glass fiber dividing the cavity	0.44	0.36

Section D—Approximate Application Factors for Windows Multiply Flat Glass U Values by These Factors

Window Description	Single Glass		Double Glass[e]		Windows with Storm Sash[g]	
	Percent Glass[f]	Factor	Percent Glass[f]	Factor	Percent Glass[f]	Factor
Sheets	100	1.00	100	1.00		
Wood sash	80	0.90	80	0.95	80	0.90
Wood sash	60	0.80	60	0.85	60	0.80
Steel sash	80	1.00	80	1.20	80	1.00[h]
Aluminum	80	1.10	80	1.30	80	1.10

(See text p. 211.)

[a] For 1 in. or greater.

[b] See Chapter 13, Table 14 and 15 for summer load.

[c] See Chapter 13, Table 14, 15 and 16 for summer load.

[d] From unpublished data recommended by ASHAE Tech. Adv. Comm. on Heat Flow Through Fenestration.

[e] Unit type double glazing (two lights or panes in same opening).

[f] Use with U values for two sheets with 1 in. air space.

[g] Based on area of exposed portion of sash; does not include frame or portions of sash concealed by frame.

[h] For metal storm sash or metal sash with attached storm pane.

Tables 13-B and 14-B show values of U for summer calculations and an outside wind velocity of 7.5 mph. Tables 11, 12 and 15 show values of U for both winter and summer. Tables 9 through 12 are for indoor U values and are based upon still air. All roof coefficient tables also take into account the direction of heat flow. Care must be exercised in selecting the

Table 19. Coefficients of Transmission (U) of Solid Wood Doors

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

Nominal Thickness Inches	Actual Thickness Inches	U[a, b] Exposed Door	U[a, b] With Glass Storm Door
1	$\frac{25}{32}$	0.64	0.37
$1\frac{1}{4}$	$1\frac{1}{16}$	0.55	0.34
$1\frac{1}{2}$	$1\frac{5}{16}$	0.49	0.32
$1\frac{3}{4}$	$1\frac{3}{8}$	0.48	0.31
2	$1\frac{5}{8}$	0.43	0.28
$2\frac{1}{2}$	$2\frac{1}{8}$	0.36	0.26
3	$2\frac{5}{8}$	0.31	0.23

[a] Computed using $k = 1.10$ for wood, $f_i = 1.46$, $f_e = 6.0$, and 1.03 for air space.

[b] A U value of 0.85 may be used for single exposed doors containing thin wood panels or single panes of glass, and 0.39 for the same with glass storm doors.

[c] 50 percent glass and thin wood panels.

Table 20. Conversion Table for Wall Coefficient U for Various Wind Velocities

U for 15 mph[a]	U for 0 to 30 mph Wind Velocities					
	0	5	10	20	25	30
0.050	0.049	0.050	0.050	0.050	0.050	0.050
0.060	0.059	0.059	0.060	0.060	0.060	0.060
0.070	0.068	0.069	0.070	0.070	0.070	0.070
0.080	0.078	0.079	0.080	0.080	0.080	0.080
0.090	0.087	0.089	0.090	0.090	0.091	0.091
0.100	0.096	0.099	0.100	0.100	0.101	0.101
0.110	0.105	0.108	0.109	0.110	0.111	0.111
0.130	0.123	0.127	0.129	0.131	0.131	0.131
0.150	0.141	0.147	0.149	0.151	0.151	0.152
0.170	0.158	0.166	0.169	0.171	0.172	0.172
0.190	0.175	0.184	0.188	0.191	0.192	0.193
0.210	0.192	0.203	0.208	0.212	0.213	0.213
0.230	0.209	0.222	0.227	0.232	0.233	0.234
0.250	0.226	0.241	0.247	0.252	0.253	0.254
0.270	0.241	0.259	0.266	0.273	0.274	0.275
0.290	0.257	0.278	0.286	0.293	0.295	0.296
0.310	0.273	0.296	0.305	0.313	0.315	0.317
0.330	0.288	0.314	0.324	0.333	0.336	0.338
0.350	0.303	0.332	0.344	0.354	0.357	0.359
0.370	0.318	0.350	0.363	0.375	0.378	0.380
0.390	0.333	0.368	0.382	0.395	0.399	0.401
0.410	0.347	0.385	0.402	0.416	0.420	0.422
0.430	0.362	0.403	0.421	0.436	0.441	0.444
0.450	0.376	0.420	0.439	0.457	0.462	0.465
0.500	0.410	0.464	0.487	0.509	0.514	0.518
0.600	0.474	0.548	0.581	0.612	0.620	0.626
0.700	0.535	0.631	0.675	0.716	0.728	0.736
0.800	0.592	0.711	0.766	0.821	0.836	0.847
0.900	0.645	0.789	0.858	0.927	0.946	0.960
1.000	0.695	0.865	0.949	1.034	1.058	1.075
1.100	0.742	0.939	1.039	1.142	1.170	1.192
1.200	0.786	1.010	1.129	1.250	1.285	1.318
1.300	0.828	1.080	1.217	1.359	1.400	1.430

[a] U in first column is from previous tables or as calculated for 15 mph wind velocity.

table which applies to the design conditions. Table 20 shows comparative values of U for other wind velocities. When this table is used for summer U values, it is necessary to enter the table at 7.5 mph which can be interpolated between 5 and 10 mph. Any value taken from this table should be rounded to two significant figures.