Table 16. Coefficients of Transmission (U) of Various Types of Flat Roofs Covered with Built-Up Roofing[a]

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

No.	Type of Roof Deck	Thickness of Roof Deck (Inches)	Without Ceilings—Underside of Roof Exposed								With Metal Lath and Plaster Ceilings[e]							
			Column A. No insulation. Column B. Rigid insulation (½ in.). Column C. Rigid insulation (1 in.). Column D. Rigid insulation (1½ in.). Column E. Rigid insulation (2 in.). Column F. Corkboard (1 in.). Column G. Corkboard (1½ in.). Column H. Corkboard (2 in.).								Column I. No insulation. Column J. Rigid insulation (½ in.). Column K. Rigid insulation (1 in.). Column L. Rigid insulation (1½ in.). Column M. Rigid insulation (2 in.). Column N. Corkboard (1 in.). Column O. Corkboard (1½ in.). Column P. Corkboard (2 in.).							
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	Precast Cement Tile	1⅝	0.85	0.37	0.24	0.18	0.14	0.22	0.16	0.13	0.43	0.26	0.19	0.15	0.12	0.18	0.14	0.11
2	Concrete	2	0.82	0.37	0.24	0.17	0.14	0.22	0.16	0.13	0.42	0.26	0.19	0.15	0.12	0.18	0.14	0.11
3	Concrete	4	0.72	0.34	0.23	0.17	0.13	0.21	0.16	0.12	0.40	0.25	0.18	0.14	0.12	0.17	0.13	0.11
4	Concrete	6	0.64	0.33	0.22	0.16	0.13	0.21	0.15	0.12	0.37	0.24	0.18	0.14	0.11	0.17	0.13	0.11
5	Wood	1[b]	0.49	0.28	0.20	0.15	0.12	0.19	0.14	0.12	0.32	0.21	0.16	0.13	0.11	0.15	0.12	0.10
6	Wood	1½[b]	0.37	0.24	0.18	0.14	0.11	0.17	0.13	0.11	0.26	0.19	0.15	0.12	0.10	0.14	0.11	0.095
7	Wood	2[b]	0.32	0.22	0.16	0.13	0.11	0.16	0.12	0.10	0.24	0.17	0.14	0.11	0.097	0.13	0.11	0.092
8	Wood	4[b]	0.23	0.17	0.14	0.11	0.096	0.13	0.11	0.091	0.18	0.14	0.12	0.10	0.087	0.11	0.096	0.082
9	Gypsum Fiber Concrete[c] (2 in.) on Plaster Board (⅜ in.)	2⅜	0.40	0.25	0.18	0.14	0.12	0.17	0.13	0.11	0.27	0.19	0.15	0.12	0.10	0.14	0.12	0.097
10	Gypsum Fiber Concrete[c] (3 in.) on Plaster Board (⅜ in.)	3⅜	0.32	0.22	0.16	0.13	0.11	0.15	0.12	0.10	0.23	0.17	0.14	0.11	0.097	0.13	0.11	0.091
11	Flat Metal Roofs[d]		0.95	0.39	0.25	0.18	0.14	0.23	0.17	0.13	0.46	0.27	0.19	0.15	0.12	0.18	0.14	0.11

[a] Computed from factors given in Table 7.

[b] Nominal thicknesses specified—actual thicknesses used in calculations.

[c] Gypsum fiber concrete—87½ per cent gypsum, 12½ per cent wood fiber.

[d] Coefficient of transmission of bare corrugated iron (no roofing) is 1.50 Btu per hour per square foot of projected area per degree Fahrenheit difference in temperature, based on an outside wind velocity of 15 mph.

[e] These coefficients may be used with sufficient accuracy for wood lath and plaster, or plaster board and plaster ceilings. It is assumed that there is an air space between the under side of the roof deck and the upper side of the ceiling.

Table 17. 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.

No.	Type of Roofing and Roof Sheathing	Insulation between Roof Rafters	Type of Ceiling (Applied Directly to Roof Rafters)								
			Column A. No ceiling (rafters exposed). Column B. Metal lath and plaster (¾ in.). Column C. Plaster board (⅜ in.) and plaster (½ in.). Column D. Wood lath and plaster. Column E. Rigid insulation (½ in.). Column F. Rigid insulation (½ in.) and plaster (½ in.). Column G. Rigid insulation (1 in.) and plaster (½ in.). Column H. Corkboard (1½ in.) and plaster (½ in.). Column I. Corkboard (2 in.) and plaster (½ in.).								
			A	B	C	D	E	F	G	H	I
1	Wood Shingles on Wood Strips[b]	None	0.48	0.30	0.29	0.29	0.22	0.21	0.16	0.12	0.10
2		½ in. Flexible[c]	.....	0.17	0.16	0.16	0.14	0.13	0.11	0.091	0.079
3		1 in. Flexible[c]	.....	0.13	0.12	0.12	0.11	0.11	0.092	0.078	0.069
4		3⅝ in. Flaked Gypsum[c]	.....	0.097	0.096	0.096	0.086	0.085	0.076	0.066	0.059
5		3⅝ in. Rock Wool[c]	.....	0.065	0.065	0.065	0.062	0.060	0.055	0.050	0.046
6	Asphalt Shingles, Rigid Asbestos Shingles, Composition Roofing, or Slate or Tile Roofing[d] on Wood Sheathing[f]	None	0.56	0.34	0.32	0.32	0.24	0.23	0.17	0.13	0.11
7		½ in. Flexible[c]	.....	0.18	0.17	0.17	0.14	0.14	0.12	0.094	0.089
8		1 in. Flexible[c]	.....	0.13	0.13	0.13	0.11	0.11	0.095	0.080	0.071
9		3⅝ in. Flaked Gypsum	.....	0.10	0.10	0.10	0.092	0.091	0.080	0.069	0.062
10		3⅝ in. Rock Wool[c]	.....	0.071	0.070	0.070	0.065	0.064	0.059	0.053	0.048

[a] Computed from factors given in Table 7. 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 3⅝ in. thick based on the actual width of 2 in. by 4 in. rafters.

[f] Sheathing assumed ¹³⁄₁₆ in. thick.