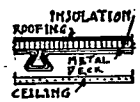
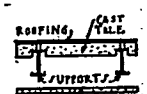
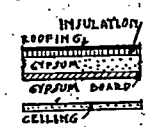
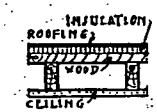
TABLE 16. COEFFICIENTS OF TRANSMISSION (U) OF FLAT ROOFS COVERED WITH BUILT-UP ROOFING. WITH LATH AND PLASTER CEILINGS[a]

(See Table 15 for Flat Roofs with No Ceilings)

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

TYPE OF ROOF DECK	THICKNESS OF ROOF DECK (INCHES)	NO INSULATION	INSULATION ON TOP OF DECK (COVERED WITH BUILT-UP ROOFING)							NUMBER
			INSULATING BOARD (Thickness Below)				CORKBOARD (Thickness Below)			
			½ In.	1 In.	1½ In.	2 In.	1 In.	1½ In.	2 In.	
		A	B	C	D	E	F	G	H	
Flat Metal Roof Deck 		0.46	0.27	0.19	0.15	0.12	0.18	0.14	0.11	12
Precast Cement Tile 	1½ in.	0.43	0.26	0.19	0.15	0.12	0.18	0.14	0.11	13
Concrete 	2 in.	0.42	0.26	0.19	0.14	0.12	0.18	0.14	0.11	14
	4 in.	0.40	0.25	0.18	0.14	0.12	0.17	0.13	0.11	15
	6 in	0.37	0.24	0.18	0.14	0.11	0.17	0.13	0.11	16
Gypsum Fiber Concrete[b] on ½ in. Gypsum Board 	2½ in.	0.27	0.19	0.15	0.12	0.10	0.14	0.12	0.097	17
	3½ in.	0.23	0.17	0.14	0.11	0.097	0.13	0.11	0.091	18
Wood[c] 	1 in.	0.31	0.21	0.16	0.13	0.11	0.15	0.12	0.10	19
	1½ in.	0.26	0.19	0.15	0.12	0.10	0.14	0.11	0.095	20
	2 in.	0.24	0.17	0.14	0.11	0.097	0.13	0.11	0.092	21
	3 in.	0.18	0.14	0.12	0.10	0.087	0.11	0.095	0.082	22

[a] Calculations based on metal lath and plaster ceilings, but coefficients may be used with sufficient accuracy for gypsum lath or wood lath 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.

[b] 87½ percent gypsum, 12½ percent wood fiber. Thickness indicated includes ½ in. gypsum board.

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

TABLE 17. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS

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

TYPE OF CEILING (APPLIED DIRECTLY TO ROOF RAFTERS)	WOOD SHINGLES (On 1 x 4 Wood Strips Spaced 2 In. Apart)					ASPHALT SHINGLES OR ROLL ROOFING (On Solid Wood Sheathing)					SLATE OR TILE[b] (On Solid Wood Sheathing)					SECTION
	Insulation Between Rafters					Insulation Between Rafters					Insulation Between Rafters					
	None	Blanket or Bat (Thickness Below)				None	Blanket or Bat (Thickness Below)				None	Blanket or Bat (Thickness Below)				
		1 In.	2 In.	3 In.			1 In.	2 In.	3 In.			1 In.	2 In.	3 In.		
	A	B	C[a]	D[a]	E	F	G[a]	H[a]		I	J	K[a]	L[a]			
No Ceiling Applied to Rafters	0.48[d]	0.15	0.10	0.081	0.52[d]	0.15	0.11	0.084		0.55[d]	0.16	0.11	0.083			1
Metal Lath and Plaster[e]	0.31	0.14	0.10	0.081	0.33	0.15	0.10	0.083		0.34	0.15	0.10	0.083			2
Gypsum Board (⅜ in.) Decorated	0.30	0.14	0.10	0.080	0.32	0.15	0.10	0.082		0.33	0.15	0.10	0.083			3
Wood Lath and Plaster	0.29	0.14	0.10	0.080	0.31	0.14	0.10	0.081		0.32	0.15	0.10	0.082			4
Gypsum Lath (⅜ in.) Plastered[e]	0.29	0.14	0.10	0.079	0.31	0.14	0.10	0.081		0.32	0.14	0.10	0.082			5
Plywood (⅜ in.) Plain or Decorated	0.29	0.14	0.099	0.079	0.30	0.14	0.10	0.081		0.31	0.15	0.10	0.081			6
Insulating Board (½ in.) Plain or Decorated	0.22	0.12	0.090	0.072	0.23	0.12	0.091	0.074		0.24	0.13	0.092	0.076			7
Insulating Board Lath (½ in.) Plastered[e]	0.23	0.13	0.088	0.072	0.22	0.12	0.090	0.073		0.23	0.12	0.091	0.074			8
Insulating Board Lath (1 in.) Plastered[e]	0.16	0.10	0.078	0.064	0.17	0.10	0.079	0.065		0.17	0.10	0.080	0.066			9

(See text on p. 184.)

[a] Coefficients corrected for framing on basis of 15 percent area, 2 in. x 4 in. (nominal), 16 in. on centers.

[b] Figures in Columns I, J, K and L may be used with sufficient accuracy for rigid asbestos shingles on wood sheathing. Layer of slater's felt neglected.

[c] Sheathing and wood stripe assumed ⅝ in. thick.

[d] Plaster assumed ½ in. thick.

[e] Plaster assumed ⅜ in. thick.

[f] No air space included in 1-A, 1-E or 1-I; all other coefficients based on one air space.