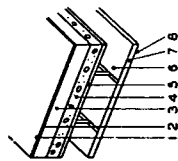


TABLE 13B. COEFFICIENTS OF TRANSMISSION (U) OF FLAT MASONRY ROOFS WITH BUILT-UP ROOFING WITH AND WITHOUT SUSPENDED CEILING*



EXAMPLE

Resistances used are given below in this table or in Table 3 or 4.	Resistances used are given below in this table or in Table 3 or 4.
Construction (heat flow down)	Replace item 3 with roof insulation ($C = 0.38$) and remove sus-
i. Outside surface (7.5 mph wind).....	pend ceiling
	0.26
	0.87

- | Construction (heat flow down) | Resistance | U-value | Heat loss per sq. ft. insulation (°C = 1.8°F) |
|---|------------|---------|--|
| 1. Outside surface (4 mph wind) | 0.03 | 0.33 | 3.87 |
| 2. Plaster surface (¾ in.) | 0.04 | 0.25 | 1.25 |
| 3. Plaster surface (¾ in.) | 0.04 | 0.25 | 1.25 |
| 4. Roof insulation (none) | 0.00 | 0.00 | 0.00 |
| 5. Concrete slab (gravel agg.) (6 in.) | 0.48 | 0.48 | 6. Air space |
| 6. Concrete slab (gravel agg.) (6 in.) | 0.00 | 0.00 | 7. Gypsum lath (¾ in.) and ½ in. plas. (lt. wt. agg.) 0.64 |
| 7. Temporary form bd. | 1.25 | 1.25 | 8. Air space (8 in.) |
| 8. Air space (8 in.) | 0.04 | 0.04 | 9. Gypsum lath (¾ in.) and ½ in. plas. (lt. wt. agg.) 0.64 |
| 9. Gypsum lath (¾ in.) and ½ in. plas. (lt. wt. agg.) | 0.04 | 0.04 | 10. Inside surface (still air) |
| 10. Inside surface (still air) | 0.93 | 0.93 | |

Total resistance	<u>3.87</u>	Add
------------------------	-------------	-----

$U = 1/R = 1/3.87 = \dots\dots\dots$
See value 0.26 in bold face type in table below.

See Value 0.20 in bold face type in table below:

1

TO ADJUST U VALUES FOR CONSTRUCTION WITH ADDED INSULATION IN AIR SPACE, SEE TABLE 16.

DIRECTION OF HEAT FLOW	DOWNWARD FLOW (SUMMER CONDITIONS)												
	TYPE OF CEILING												
	ROOF INSULATION-No CEILING			SUSPENDED CEILING ^a						ACOUSTICAL TILE			
TYPE OF DECK	TYPE OF FORM	C VALUE OF ROOF INSULATION	GYPSUM BD. (3/4 IN. AND PLAS.	METAL LATH AND PLAS.	On Furring or Gypsum Channels (% in.)			On Furring or Gypsum Channels (% in.)	Resistance				
					No plas.	Sand Agr. (1/2 in.)	Sand Agr. (3/4 in.)						
None		0.72	0.36	0.24	0.19	0.15	0.12						
		1.39	0.78	4.17	6.26	6.67	8.53	0.94	0.41	0.47	0.19	1.19	1.78

MATERIAL		R	RESISTANCE																
MATERIAL		R	R																
Concrete slab ^d (Gravel agg.)	Temporary	0.38	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(4 in.)	0.48	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(6 in.)	0.48	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(8 in.)	0.64	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	Lt. wt. agg. ^e	0.88	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(2 in.)	0.88	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(3 in.)	3.53	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(4 in.)	4.44	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(5 in.)	4.44	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
	(6 in.)	4.44	—	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U
Gypsum slabs ^f (2 in.)	Gypsum bd. (1/4 in.)	1.80	0.32	0.23	0.17	0.14	0.12	0.10	0.09	0.21	0.20	0.21	0.21	0.21	0.22	0.18	0.16	0.17	0.15
	Insulation board (1 in.)	0.78	0.18	0.13	0.12	0.10	0.09	0.08	0.07	0.14	0.14	0.14	0.14	0.15	0.13	0.12	0.12	0.11	0.10
	Insulation board (1 1/4 in.)	0.78	0.15	0.12	0.10	0.09	0.08	0.07	0.07	0.12	0.11	0.12	0.12	0.12	0.12	0.11	0.10	0.10	0.10
	Asbestos cement bd. (3/4 in.)	0.68	0.34	0.23	0.18	0.14	0.12	0.10	0.09	0.22	0.21	0.22	0.23	0.23	0.19	0.17	0.17	0.18	0.16
	Gypsum fiber bd. (1 in.)	1.80	0.15	0.13	0.11	0.09	0.09	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.11	0.10	0.11	0.10	0.10
	Gypsum fiber bd. (1 1/4 in.)	1.80	0.12	0.10	0.09	0.08	0.07	0.07	0.07	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
	Insulation bd. (1/4 in.)	0.78	0.16	0.12	0.10	0.09	0.08	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.11	0.10	0.11	0.10	0.10
	Insulation bd. (1 1/4 in.)	0.78	0.13	0.10	0.09	0.08	0.07	0.07	0.07	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
	Asbestos cement bd. (3/4 in.)	0.68	0.30	0.21	0.16	0.13	0.12	0.10	0.09	0.20	0.19	0.20	0.20	0.21	0.17	0.16	0.16	0.16	0.15
	Gypsum fiber bd. (1 in.)	0.45	0.14	0.12	0.10	0.09	0.08	0.07	0.06	0.11	0.11	0.11	0.11	0.12	0.10	0.10	0.10	0.10	0.10
Gypsum slabs ^f (4 in.)	Gypsum bd. (1/4 in.)	0.78	0.15	0.12	0.10	0.09	0.08	0.07	0.07	0.12	0.12	0.12	0.12	0.12	0.11	0.10	0.11	0.10	0.10
	Insulation bd. (1/4 in.)	0.78	0.12	0.10	0.09	0.08	0.07	0.06	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09
	Asbestos cement bd. (3/4 in.)	0.68	0.23	0.19	0.15	0.13	0.11	0.09	0.28	0.17	0.18	0.18	0.19	0.18	0.16	0.16	0.16	0.16	0.15
	Gypsum fiber bd. (1 in.)	1.80	0.13	0.11	0.09	0.08	0.07	0.06	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10
	Gypsum fiber bd. (1 1/4 in.)	1.80	0.10	0.09	0.08	0.07	0.06	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09
	Insulation bd. (1/4 in.)	0.78	0.13	0.11	0.09	0.08	0.07	0.06	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10
	Insulation bd. (1 1/4 in.)	0.78	0.10	0.09	0.08	0.07	0.06	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09
	Asbestos cement bd. (3/4 in.)	0.68	0.23	0.19	0.15	0.13	0.11	0.09	0.28	0.17	0.18	0.18	0.19	0.18	0.16	0.16	0.16	0.16	0.15
	Gypsum fiber bd. (1 in.)	1.80	0.13	0.11	0.09	0.08	0.07	0.06	0.11	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10
	Gypsum fiber bd. (1 1/4 in.)	1.80	0.10	0.09	0.08	0.07	0.06	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09

^a See text section Calculating Overall Coefficients for basis of calculations.

^b To adjust U values see note just above this table.

^c *U* values would also apply if slab were poured on metal lath, paper-backed wire fabric, or asbestos-cement board (1/4 in.)

^d Concrete assumed to have a thermal conductivity k of 12.0 and a density of 140 lb per cu ft.

^o Concrete assumed to have a thermal conductivity k of 0.90 and a density of 30 lb per cu ft.

⁸ Gypsum fiber concrete with 12½ percent wood chips (thermal conductivity: $k = 1.00$)

^b See Table 16 E for U value of roof and ceiling construction with roof insulation added to roof deck.