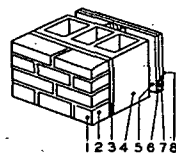


TABLE 7. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY WALLS*

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.



Resistances used are given below in this table or in Table 3 or 4.

Construction	Resistance (R)
1. Outside surface (15 mph wind)	0.17
2. Face brick (4 in.) (av. R)	0.39
3. Cement mortar $\frac{1}{2}$ in.	0.10
4. Concrete block (cinder agg.) (4 in.)	1.11
5. Air space	0.97
6. Gypsum lath ($\frac{3}{8}$ in.)	0.32
7. Plaster (sand agg.) $\frac{1}{2}$ in.	0.09
8. Inside surface (still air)	0.68

Total resistance 3.83
 $U = 1/R = 1/3.83 = 0.26$
 See value 0.26 in bold face type in table below.

EXAMPLE OF SUBSTITUTION

Resistances used are given below in this table or in Table 3 or 4.

Replace items 6 and 7 with wood panels ($\frac{3}{4}$ in.) and vapor barrier applied over furring strips
 Total resistance 3.83

Deduct	
6. Gypsum lath ($\frac{3}{8}$ in.)	0.32
7. Plaster (Sand agg.) $\frac{1}{2}$ in.	0.09

Resistance deducted 0.41

Add	
6. Vapor barrier	0.06
7. Wood panel ($\frac{3}{4}$ in.)	0.04

Resistance added 1.00

Total resistance = 4.43

$U = 1/R = 1/4.43 = 0.23$

TO ADJUST U VALUES FOR CONSTRUCTION WITH ADDED INSULATION BETWEEN FURRING STRIPS, SEE TABLE 16.

EXTERIOR FACING	Av. R	BACKING	RESISTANCE $\rightarrow$	INTERIOR FINISH											
				NONE	PLAS. $\frac{3}{8}$ IN. ON WALL	METAL LATH AND $\frac{3}{4}$ IN. PLAS. ON FURRING	GYPSUM LATH ($\frac{3}{8}$ IN.) AND $\frac{1}{2}$ IN. PLAS. ON FURRING	INSUL. B.D. LATH ($\frac{1}{2}$ IN.) AND $\frac{1}{2}$ IN. PLAS. ON FURRING	WOOD LATH AND $\frac{1}{2}$ IN. PLAS.	No Plaster	Sand Agg.	Lt. Wt. Agg.	No Plaster	Sand Agg.	Lt. Wt. Agg.
MATERIAL	Av. R	MATERIAL	R	U	U	U	U	U	U	U	U	U	U	U	U
Concrete block (Cinder agg.)	0.44	(4 in.)	1.11	0.41	0.39	0.35	0.28	0.26	0.27	0.26	0.25	0.21	0.20	0.20	0.20
		(8 in.)	1.72	0.33	0.32	0.29	0.24	0.22	0.23	0.23	0.21	0.18	0.18	0.18	0.18
		(12 in.)	1.89	0.31	0.30	0.28	0.23	0.21	0.22	0.22	0.21	0.18	0.17	0.17	0.17
		(Lt. wt. agg.)													
(4 in.)	0.32	(4 in.)	1.50	0.35	0.34	0.31	0.25	0.23	0.24	0.24	0.22	0.19	0.19	0.19	0.19
		(8 in.)	2.00	0.30	0.29	0.27	0.23	0.21	0.22	0.21	0.20	0.17	0.17	0.17	0.17
		(12 in.)	2.27	0.28	0.27	0.25	0.21	0.20	0.20	0.20	0.19	0.17	0.16	0.16	0.16
		(Sand agg.)													
(4 in.)	0.39	(4 in.)	0.77	0.49	0.46	0.41	0.32	0.29	0.30	0.29	0.27	0.22	0.22	0.22	0.22
		(8 in.)	1.11	0.41	0.39	0.35	0.28	0.26	0.27	0.26	0.25	0.21	0.20	0.20	0.20
		(12 in.)	1.28	0.38	0.37	0.33	0.27	0.25	0.26	0.25	0.24	0.20	0.20	0.20	0.20
		(Hollow clay tile)													
(4 in.)	0.48	(4 in.)	1.11	0.41	0.39	0.35	0.28	0.26	0.27	0.26	0.25	0.21	0.20	0.20	0.20
		(8 in.)	1.86	0.31	0.30	0.28	0.23	0.22	0.22	0.22	0.21	0.18	0.18	0.18	0.18
		(12 in.)	2.50	0.26	0.25	0.24	0.20	0.19	0.19	0.19	0.18	0.16	0.16	0.16	0.16
		(Concrete (Sand agg.))													
(4 in.)	0.35	(4 in.)	0.52	0.60	0.56	0.49	0.36	0.32	0.34	0.33	0.31	0.25	0.24	0.24	0.24
		(6 in.)	0.48	0.55	0.52	0.45	0.34	0.31	0.32	0.31	0.29	0.24	0.23	0.23	0.23
		(8 in.)	0.64	0.51	0.48	0.42	0.32	0.29	0.31	0.30	0.28	0.23	0.22	0.22	0.22
		(12 in.)													

TABLE 7. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY WALLS* (Concluded)

EXTERIOR FACING	Av. R	BACKING	RESISTANCE $\rightarrow$	INTERIOR FINISH											
				NONE	PLAS. $\frac{3}{8}$ IN. ON WALL	METAL LATH AND $\frac{3}{4}$ IN. PLAS. ON FURRING	GYPSUM LATH ($\frac{3}{8}$ IN.) AND $\frac{1}{2}$ IN. PLAS. ON FURRING	INSUL. B.D. LATH ($\frac{1}{2}$ IN.) AND $\frac{1}{2}$ IN. PLAS. ON FURRING	WOOD LATH AND $\frac{1}{2}$ IN. PLAS.	No Plaster	Sand Agg.	Lt. Wt. Agg.	No Plaster	Sand Agg.	Lt. Wt. Agg.
MATERIAL	Av. R	MATERIAL	R	U	U	U	U	U	U	U	U	U	U	U	U
Concrete block (Cinder agg.)	0.80	(4 in.)	1.11	0.36	0.35	0.32	0.26	0.24	0.25	0.24	0.23	0.19	0.19	0.19	0.19
		(8 in.)	1.72	0.29	0.29	0.26	0.22	0.21	0.21	0.21	0.20	0.17	0.17	0.17	0.17
		(12 in.)	1.89	0.28	0.27	0.25	0.21	0.20	0.21	0.20	0.19	0.17	0.17	0.17	0.17
		(Lt. wt. agg.)													
(4 in.)	0.72	(4 in.)	1.50	0.32	0.30	0.28	0.23	0.22	0.22	0.22	0.21	0.18	0.18	0.18	0.18
		(8 in.)	2.00	0.27	0.26	0.25	0.21	0.20	0.20	0.20	0.19	0.16	0.16	0.16	0.16
		(12 in.)	2.27	0.25	0.25	0.23	0.20	0.19	0.19	0.19	0.18	0.16	0.16	0.16	0.16
		(Sand agg.)													
Common brick 4 in.	0.64	(4 in.)	0.77	0.42	0.40	0.36	0.29	0.26	0.27	0.27	0.25	0.21	0.21	0.21	0.21
		(8 in.)	1.11	0.36	0.35	0.32	0.26	0.24	0.25	0.24	0.23	0.19	0.19	0.19	0.19
		(12 in.)	1.28	0.34	0.33	0.30	0.25	0.23	0.24	0.23	0.22	0.19	0.18	0.18	0.18
		(Hollow clay tile)													
Precast concrete (sand agg.) - 8 in.	0.64	(4 in.)	1.11	0.36	0.35	0.32	0.26	0.24	0.25	0.24	0.23	0.19	0.19	0.19	0.19
		(8 in.)	1.86	0.28	0.28	0.26	0.22	0.20	0.21	0.20	0.19	0.17	0.17	0.17	0.17
		(12 in.)	2.50	0.24	0.23	0.22	0.19	0.18	0.18	0.18	0.17	0.15	0.15	0.15	0.15
		(Concrete (Sand agg.))													
(4 in.)	0.48	(4 in.)	0.52	0.50	0.48	0.42	0.32	0.29	0.30	0.30	0.28	0.23	0.22	0.22	0.22
		(6 in.)	0.48	0.47	0.44	0.39	0.31	0.28	0.29	0.28	0.27	0.22	0.22	0.22	0.22
		(8 in.)	0.64	0.43	0.41	0.37	0.29	0.27	0.28	0.27	0.26	0.21	0.21	0.21	0.21
		(12 in.)													

* See text section Calculating Overall Coefficients for basis of calculations.

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

Chapter 10. Moisture from condensation or other sources materially reduces the heat-flow resistance of insulation.

INSULATED CONSTRUCTIONS—HOW TO USE TABLE 16

In Tables 5 through 15, U values are given for many common types of building wall, floor, and ceiling constructions. For such of these constructions as contain an air space, the tabulated U value is based on the assumption that the air space is empty, and that its surfaces are of ordinary building materials of low thermal reflectivity, such as wood, masonry, plaster or paper. Considerable benefit in reducing the heat transmission coefficient of a construction can be effected by the application of thermal insulating materials in the air space.

Table 16 provides a means of determining, without calculations, the U value of the between-framing area of such constructions with the added insulation installed in the air space. Column 1 of Table 16 refers to the U values of uninsulated constructions as taken from Tables 5 through 15. Columns 2 to 14 of the table give corresponding coefficients U_i for the constructions with various insulating applications in the between-framing air space, as indicated by the column headings. Table 16 is in 5 parts, (A, B, C, D, and E) corresponding to the type of building element and the direc-