

TABLE 7. RECOMMENDED CONDUCTIVITIES AND CONDUCTANCES FOR COMPUTING HEAT TRANSMISSION COEFFICIENTS

Conductivities are expressed in Btu per hour per square foot per degree Fahrenheit per inch thickness. Conductances are indicated by asterisks (*) and are for the thickness or condition stated, not per inch.

MATERIAL	CONDUCTIVITY OR CONDUCTANCE	MATERIAL	CONDUCTIVITY OR CONDUCTANCE
Brick, Common	5.00	Plaster Board (½ in.)	2.82*
Brick, Face	9.2	Roofing	
Cement Mortar	12.00	Asbestos Shingles	6.00*
Cinder Concrete	5.20	Asphalt or Composition Roofing	6.50*
Cinder Blocks* (8 in.)	0.62*	Built-up, ¾ in. thick	3.53*
Cinder Blocks* (12 in.)	0.51*	Slate Shingles	10.37
Concrete Blocks* (8 in.)	1.0*	Wood Shingles (see woods)	
Concrete Blocks* (12 in.)	0.80*	Stone	12.00
Concrete	12.00	Stucco	12.00
Gypsum Fiber Concrete	1.66	Tile or Terrazzo	12.00
Hollow Clay Tile (4 in.) ^a	1.00*	Wood Lath and Plaster	2.50*
Hollow Clay Tile (6 in.) ^a	0.64*	Woods	
Hollow Clay Tile (8 in.) ^a	0.60*	1-in. Fir sheathing, building paper and yellow pine lap siding	0.50*
Hollow Clay Tile (10 in.) ^a	0.58*	1-in. Fir sheathing and building paper	0.82*
Hollow Clay Tile (12 in.) ^a	0.40*	Yellow pine lap siding	1.28*
Hollow Clay Tile (16 in.) ^a	0.31*	Yellow pine or fir	0.80
Hollow Gypsum Tile (4 in.)	0.46*	Maple or oak	1.15
Insulations		Shingles, wood	1.28*
Corkboard	0.30	Air spaces	1.10*
Flexible	0.27	Surfaces, still air (f)	1.65*
Flaked Gypsum (24 lb)	0.48	Surfaces, 15 mph (fo)	6.00*
Rigid Insulation	0.33		
Rock Wool	0.30		
Plaster (Gypsum)	3.3		
Plaster Board (¾ in.)	3.73*		

*For thickness or condition stated, not per 1 in.

^aOne air cell in the direction of heat flow.

The 4-in., 8-in. and 10-in. hollow tile figures are based on two cells in the direction of heat flow. The 12-in. hollow tile is based on three cells in the direction of heat flow. The 16-in. hollow tile consists of one 10-in. and one 6-in. tile, each having two cells in the direction of heat flow.

and hence, the amount of heat absorbed by radiation by each square foot of roof surface is less than is given off by radiation by each square foot of ceiling surface.

Example 2. Determine the combined coefficient of transmission of a roof constructed of asbestos shingles applied over wood sheathing on rafters, an unheated attic, and a wood lath and plaster ceiling, based on a roof having a one-third pitch, for which the value of n is 1.2.

$$U_r = \frac{1}{\frac{1}{6.0} + \frac{1}{2.20} + \frac{1}{6.0} + \frac{0.781}{0.80}} = 0.567$$

$$U_{ce} = \frac{1}{\frac{1}{1.65} + \frac{1}{2.20} + \frac{1}{2.50}} = 0.685$$

Substituting these values in Equation 6:

$$U = \frac{0.567 \times 0.685}{1.2 \times 0.567 + 0.685} = 0.28 \text{ Btu per hour per square foot of roof area per degree difference in temperature between the air near the under side of the ceiling and the outside air.}$$

If the unheated attic space between the roof and ceiling has no dormers, windows or vertical wall surfaces, the combined coefficients may be used for determining the heat loss through the roof construction between the attic and top-floor ceiling, but it should be noted that these coefficients

TABLE 8. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY WALLS^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 a wind velocity of 10 mph			COEFFICIENTS OF TRANSMISSION (U) OF MASONRY WALLS											
WALL NO.	THICKNESS OF MASONRY (INCHES)	TYPE OF WALL	INTERIOR FINISH											
			UNINSULATED WALLS						INSULATED WALLS					
			Plain walls—no interior finish.						Plaster (1/4 in.)—furred.					
			Plaster (1/4 in.) on wall.						Plaster (1/2 in.) on rigid insulation (1 in.)—furred.					
			Plaster on wood lath—furred.						Plaster on corkboard (1/4 in.) set in cement mortar (1/4 in.).					
			Plaster (1/4 in.) on metal lath—furred.						Plaster on corkboard (2 in.) set in cement mortar (1/4 in.).					
			Plaster (1/4 in.) on plaster board (3/8 in.)—furred.						Plaster on wood lath attached to furring strips (3 in.)—furred.					
									Plaster on wood lath attached to furring strips (2 in.)—furred.					
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