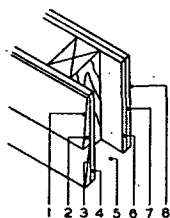


TABLE 5. COEFFICIENTS OF TRANSMISSION (U) OF FRAME WALLS^a

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.



EXAMPLE		EXAMPLE OF SUBSTITUTION
<i>Resistances used are given below in this table or in Table 3 or 4</i>		<i>Resistances used are given below in this table or in Table 3 or 4</i>
Construction	Resistance (R)	Replace items 3 and 4 with insul. bd. sheathing (2½ in.) and items 6 and 7 with gypsum wall board (½ in.)
1. Outside surface (15 mph wind)	0.17	Total resistance..... 4.18
2. Siding, wood, ½ in. x 8 in.		Deduct.....
3. Lapped (av. R).....	0.35	3. Building paper..... 0.06
4. Wood sheathing (2½ in.).....	0.98	4. Wood sheathing (2½ in.)..... 0.98
5. Air space.....	0.97	6. Gypsum lat. (½ in.)..... 0.58
6. Gypsum lat. (½ in.).....	0.58	7. Plaster (sand agg.) ½ in..... 0.09
7. Plaster (sand agg.) ½ in.....	0.09	8. Inside surface (still air)..... 0.68
8. Inside surface (still air).....	0.68	
Total resistance.....	4.18	Resistance deducted..... 1.67
$U = 1/R = 1/4.18 = \dots 0.24$		Difference..... 2.51
See value 0.24 in bold face type in table below.		Add
		4. Insul. bd. sheathing (2½ in.)..... 0.06
		6. Gypsum bd. (½ in.)..... 0.45
		7. Gypsum bd. (½ in.)..... 0.45
		Resistance added..... 3.61
		Total resistance..... 5.18
		$U = 1/R = 1/5.18 = \dots 0.19$

TO ADJUST *U* VALUES FOR CONSTRUCTION WITH
ADDED INSULATION BETWEEN FRAMING
MEMBERS. SEE TABLE 16.

EXTERIOR ^e		INTERIOR FINISH		TYPE OF SHEATHING ^e							
				None, BUILDING PAPER	GYP-SUM BOARD 1/4 IN.	PLYWOOD 3/8 IN.	WOOD, (3/4 IN.) AND BUILDING PAPER	1/2 IN.	3/8 IN.		
MATERIAL	AV. R.	MATERIAL	R	U	U	U	U	U	U		
				RESISTANCE →							
Wood siding Drop—(1 in. x 8 in.) Bevel (1/2 in. x 8 in.) Wood shingles 7 1/2 in. exposure Wood panels (3/4 in.)	0.79 0.81 0.87 0.94	None	—	0.57	0.47	0.48	0.36	0.33	0.27		
		Gypsum bd. (3/8 in.)	0.32	0.33	0.29	0.30	0.25	0.23	0.20		
		Gypsum lath (3/8 in.) and 1/2 in. plas. (lt. wt. agg.)	0.64	0.30	0.27	0.27	0.23	0.22	0.19		
		Gypsum lath (3/8 in.) and 1/2 in. plas. (sand agg.)	0.41	0.32	0.28	0.29	0.24	0.23	0.19		
		Metal lath and 3/4 in. plas. (lt. wt. agg.)	0.47	0.31	0.28	0.28	0.24	0.22	0.19		
		Metal lath and 3/4 in. plas. (sand agg.)	0.13	0.35	0.31	0.31	0.26	0.24	0.21		
		Insul. bd. (1/2 in.)	1.43	0.24	0.22	0.22	0.19	0.18	0.16		
		Insul. bd. lath (1/2 in.) and 1/2 in. plas. (sand agg.)	1.53	0.24	0.22	0.22	0.19	0.18	0.16		
		Plywood (1/4 in.)	0.31	0.33	0.29	0.30	0.25	0.23	0.20		
		Wood panels (3/4 in.)	0.94	0.27	0.25	0.25	0.22	0.20	0.18		
		Wood lath and 1/2 in. plas. (sand agg.)	0.40	0.32	0.28	0.29	0.24	0.23	0.19		
Face-brick veneer ^f Plywood (3/8 in.)	0.44 0.47	None	—	0.73	0.56	0.58	0.42	0.38	0.30		
		Gypsum bd (3/8 in.)	0.32	0.37	0.33	0.33	0.27	0.25	0.21		
		Gypsum lath (3/8 in.) and 1/2 in. plas. (lt. wt. agg.)	0.64	0.33	0.30	0.30	0.25	0.24	0.20		
		Gypsum lath (3/8 in.) and 1/2 in. plas. (sand agg.)	0.41	0.36	0.32	0.32	0.27	0.25	0.21		
		Metal lath and 3/4 in. plas. (lt. wt. agg.)	0.47	0.35	0.31	0.32	0.26	0.25	0.21		
		Metal lath and 3/4 in. plas. (sand agg.)	0.13	0.40	0.35	0.36	0.29	0.27	0.22		
		Insul. bd. (1/2 in.)	1.43	0.26	0.24	0.24	0.21	0.20	0.17		
		Insul. bd. lath (1/2 in.) and 1/2 in. plas. (sand agg.)	1.53	0.26	0.23	0.24	0.21	0.19	0.17		
		Plywood (1/4 in.)	0.31	0.33	0.33	0.33	0.27	0.26	0.21		
		Wood panels (3/4 in.)	0.94	0.30	0.27	0.28	0.23	0.22	0.19		
		Wood lath and 1/2 in. plas. (sand agg.)	0.40	0.36	0.32	0.32	0.27	0.25	0.21		

TABLE 5. COEFFICIENTS OF TRANSMISSION (U) OF FRAME WALLS (Concluded)

		TYPE OF SHEATHING									
		NONE BUILDING PAPER		GYPSUM BOARD 1/2 IN.		PLYWOOD 1/2 IN.		WOOD (3/4 IN.) AND BUILDING PAPER		INSULATION AND SHEATHING 1/2 IN. 2 1/2 IN.	
		R		U		U		U		U	
		RESISTANCE →		0.06		0.45		0.59		1.04	
		1.52		2.06							
EXTERIOR ^c		INTERIOR FINISH									
MATERIAL ^a	AV. R	MATERIAL	R	U	U	U	U	U	U	U	U
Wood shingles over insul.; backer bd. (3/4 in.) Asphalt insul. siding	1.40	None.....	—	0.43	0.37	0.38	0.30	0.28	0.23		
	1.45 ^d	Gypsum bd. (3/4 in.).....	0.52	0.23	0.25	0.25	0.22	0.20	0.18		
		Gypsum lath (3/4 in.) and 1/2 in. plas. (lt. wt. agg.).....	0.64	0.25	0.23	0.23	0.20	0.19	0.17		
		Gypsum lath (3/4 in.) and 1/2 in. plas. (sand agg.).....	0.41	0.27	0.24	0.25	0.21	0.20	0.18		
		Metal lath and 3/4 in. plas. (lt. wt. agg.).....	0.47	0.27	0.24	0.24	0.21	0.20	0.17		
		Metal lath and 3/4 in. plas. (sand agg.).....	0.15	0.29	0.26	0.27	0.23	0.21	0.18		
		Insul. bd. (1/2 in.).....	1.45	0.21	0.20	0.20	0.18	0.17	0.15		
		Insul. bd. lath (1/2 in.) and 1/2 in. plas. (sand agg.).....	1.68	0.21	0.19	0.19	0.17	0.16	0.15		
		Plywood (3/4 in.).....	0.51	0.28	0.25	0.25	0.22	0.20	0.18		
		Wood panels (3/4 in.).....	0.94	0.24	0.22	0.22	0.19	0.18	0.16		
Wood lath and 1/2 in. plas. (sand agg.).....	0.40	0.27	0.24	0.25	0.21	0.20	0.18				
Asbestos-cement siding Stucco ^a 1 in. Asphaltroll siding	0.21	None.....	—	0.91	0.67	0.70	0.48	0.42	0.32		
	0.20	Gypsum bd. (3/4 in.).....	0.52	0.42	0.36	0.37	0.30	0.27	0.23		
		Gypsum lath (3/4 in.) and 1/2 in. plas. (lt. wt. agg.).....	0.64	0.37	0.32	0.33	0.27	0.25	0.21		
		Gypsum lath (3/4 in.) and 1/2 in. plas. (sand agg.).....	0.41	0.40	0.35	0.36	0.29	0.27	0.22		
		Metal lath and 3/4 in. plas. (lt. wt. agg.).....	0.47	0.39	0.34	0.35	0.28	0.26	0.22		
		Metal lath and 3/4 in. plas. (sand agg.).....	0.15	0.45	0.39	0.40	0.31	0.29	0.24		
		Insul. bd. (1/2 in.).....	1.45	0.29	0.26	0.26	0.22	0.21	0.18		
		Insul. bd. lath (1/2 in.) and 1/2 in. plas. (sand agg.).....	1.68	0.28	0.25	0.26	0.22	0.21	0.18		
		Plywood (3/4 in.).....	0.51	0.42	0.36	0.37	0.30	0.27	0.23		
		Wood panels (3/4 in.).....	0.94	0.33	0.29	0.30	0.25	0.23	0.20		
Wood lath and 1/2 in. plas. (sand agg.).....	0.40	0.40	0.35	0.36	0.29	0.27	0.22				

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

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

^c Note that although several types of exterior finish may be grouped because they have approximately the same thermal resistance value, it is not implied that all types may be suitable for application over all types of sheathing listed.

^d Average resistance of items listed. This average was used in computation of U values shown.

* Building paper is not included except where noted.

^f Small air space between building paper and brick veneer neglected

² Where stucco is applied over insulating board or gypsum sheathing, building paper is generally required, but the change in U value is negligible.

and installation have an increasingly greater percentage effect on heat transmission as the coefficient becomes numerically smaller. Failure to meet design estimates may be caused by lack of proper attention to exact compliance with specifications. A factor of safety may be employed as a precaution when it is judged desirable.