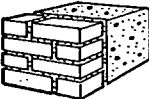
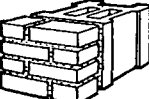
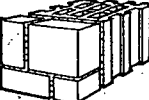
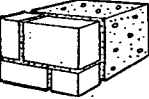


HEATING VENTILATING AIR CONDITIONING GUIDE 1944

TABLE 7. COEFFICIENTS OF TRANSMISSION (U) OF BRICK AND STONE VENEER MASONRY WALLS

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 15 mph.

TYPICAL CONSTRUCTION	FACING	BACKING	INTERIOR FINISH (PLUS INSULATION WHERE INDICATED)									WALL NUMBER
			Plain Walls—no Interior Finish	Plaster (½ in.) on Walls	Metal Lath and Plaster—Furred	Gypsum Board (½ in.) Decorated	Gypsum Lath (¾ in.) Plastered—Furred	Insulating Board (¾ in.) Plaster or Decorated—Furred	Insulating Board Lath (¾ in.) Plastered—Furred	Insulating Board Lath (1 in.) Plastered—Furred	Gypsum Lath Plastered Plus 1 in. Blanket Insulation—Furred	
			A	B	C	D	E	F	G	H	I	
		6 in. Hollow Tile ^a	0.35	0.34	0.25	0.25	0.24	0.19	0.18	0.14	0.13	88
		8 in. Hollow Tile ^a	0.34	0.32	0.25	0.24	0.23	0.19	0.18	0.14	0.13	89
	4 in. Brick Veneer ^a	6 in. Concrete.....	0.59	0.54	0.35	0.35	0.33	0.24	0.23	0.17	0.15	90
		8 in. Concrete.....	0.54	0.50	0.33	0.33	0.31	0.23	0.23	0.17	0.15	91
		8 in. Concrete Blocks ^a (Gravel Aggregate).....	0.44	0.41	0.29	0.29	0.28	0.21	0.21	0.16	0.14	92
		8 in. Concrete Blocks ^a (Cinder Aggregate).....	0.34	0.33	0.25	0.24	0.24	0.19	0.18	0.14	0.13	93
		8 in. Concrete Blocks ^a (Light Weight Aggregate) ^d	0.31	0.29	0.23	0.23	0.22	0.18	0.17	0.14	0.12	94
		8 in. Hollow Tile ^a	0.37	0.35	0.26	0.26	0.25	0.19	0.19	0.15	0.13	95
		8 in. Hollow Tile ^a	0.36	0.34	0.25	0.25	0.24	0.19	0.19	0.15	0.13	96
	4 in. Cut Stone Veneer ^a	6 in. Concrete.....	0.63	0.58	0.37	0.36	0.34	0.25	0.24	0.18	0.15	97
		8 in. Concrete.....	0.57	0.53	0.35	0.34	0.33	0.24	0.23	0.17	0.15	98
		8 in. Concrete Blocks ^a (Gravel Aggregate).....	0.47	0.44	0.30	0.30	0.29	0.22	0.21	0.16	0.14	99
		8 in. Concrete Blocks ^a (Cinder Aggregate).....	0.36	0.34	0.25	0.25	0.24	0.19	0.19	0.15	0.13	100
		8 in. Concrete Blocks ^a (Light Weight Aggregate) ^d	0.32	0.30	0.23	0.23	0.22	0.18	0.18	0.14	0.12	101

^aCalculations based on ½ in. cement mortar between backing and facing except in the case of the concrete backing which is assumed to be poured in place.

^bThe hollow tile figures are based on two air cells in the direction of heat flow.

^cHollow concrete blocks.

^dExpanded slag, burned clay or pumice.

^eThickness of plaster assumed ¾ in.

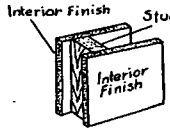
^fThickness of plaster assumed ½ in.

^gBased on 2 in. furring strips; one air space. The figures in this column may also be used for wood or metal lath.

CHAPTER 4. HEAT TRANSMISSION COEFFICIENTS

TABLE 8. COEFFICIENTS OF TRANSMISSION (U) OF FRAME PARTITIONS OR INTERIOR 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 still air (no wind) conditions on both sides.

INTERIOR FINISH		SINGLE PARTITION (Finish on one side only of studs)	DOUBLE PARTITION (Finish on both sides of studs)		PARTITION NUMBER
			No INSULATION BETWEEN STUDS	1 IN. BLANKET BETWEEN STUDS. ONE AIR SPACE.	
			A	B	
Metal Lath and Plaster ^a	0.69	0.39	0.16	1	
Gypsum Board (¾ in.) Decorated.....	0.67	0.37	0.16	2	
Wood Lath and Plaster.....	0.62	0.34	0.15	3	
Gypsum Lath (¾ in.) Plastered ^c	0.61	0.34	0.15	4	
Plywood (¾ in.) Plain or Decorated.....	0.59	0.33	0.15	5	
Insulating Board (¾ in.) Plain or Decorated.....	0.36	0.19	0.11	6	
Insulating Board Lath (¾ in.) Plastered ^c	0.35	0.18	0.11	7	
Insulating Board Lath (1 in.) Plastered ^c	0.19	0.12	0.082	8	

^aCoefficients not weighted; effect of studding neglected.

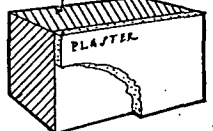
^bPlaster assumed ¾ in. thick.

^cPlaster assumed ½ in. thick.

^dFor partitions with other insulations between studs refer to Table 5, using values in Column B of above table in left hand column of Table 5. Example: What is the coefficient of transmission (U) of a partition consisting of gypsum lath and plaster on both sides of studs with 2 in. blanket between studs? Solution: According to above table, this partition with no insulation between studs (No. 4B) has a coefficient of 0.34. Referring to Table 5, it will be found that a wall having a coefficient of 0.34 with no insulation between studs, will have a coefficient of 0.097 with 2 in. of blanket insulation between studs (No. 56B).

TABLE 9. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY PARTITIONS

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 still air (no wind) conditions on both sides.

TYPE OF PARTITION	THICKNESS OF MASONRY (INCHES)	TYPE OF FINISH			PARTITION NUMBER
		No FINISH (Plain walls)	PLASTER ONE SIDE	PLASTER BOTH SIDES ^a	
		A	B	C	
	HOLLOW CLAY TILE.....	3 0.50	0.47	0.43	9
		4 0.45	0.42	0.40	10
	HOLLOW GYPSUM TILE.....	3 0.35	0.33	0.32	11
		4 0.29	0.28	0.27	12
HOLLOW CONCRETE TILE OR BLOCKS	Cinder Aggregate.....	3 0.50	0.47	0.43	13
		4 0.45	0.42	0.40	14
	Light Weight Aggregate.....	3 0.41	0.39	0.37	15
		4 0.36	0.34	0.32	16
COMMON BRICK.....	4	0.50	0.46	0.43	17

^a2 in. solid plaster partition, U = 0.53.

^bExpanded slag, burned clay or pumice.

the A.S.H.V.E. Research Laboratory⁸ indicate that the rate of heat flow through basement floors, even without insulation, does not exceed 0.10 Btu per square foot per degree Fahrenheit temperature difference between the air above the floor and the soil under the floor at the point of maximum

⁸A.S.H.V.E. RESEARCH REPORT No. 1213—Heat Loss Through Basement Walls and Floors, by F. C. Houghten, S. I. Taimuty, Carl Gutberlet and C. J. Brown (A.S.H.V.E. TRANSACTIONS, Vol. 48, 1942, p. 369).