TABLE 7-K. COEFFICIENTS OF TRANSMISSION (*U*) OF VARIOUS TYPES OF MASONRY WALL CONSTRUCTION

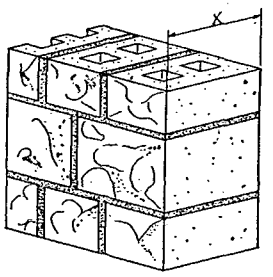
Note.—These coefficients are expressed in B.t.u. per hour per square foot per 1 deg. fahr. difference in temperature between the air on the two sides and are based on an outside wind exposure of 15 miles per hour.

CONCRETE BLOCK WALLS †

The values of U in this Table are based on the following Internal Conductivities (C) which are expressed in B.t.u. per Hr. per Sq.Ft. per 1° F

Concrete Blocks	4.84‡	per 1"
Cement Mortar	8.00	per 1"
Plaster Board	3.04	per 1"
Plaster (Gypsum)	2.32	per 1"
Wood Lath & Plaster	2.00	as applied
Cork board	0.30	per 1"
Fiber Insulation (Board form)	0.33	per 1"
Cellular Gypsum (18#)	0.59	per 1"
Powdered Gypsum (26#)	0.52	per 1"
Flaked Gypsum, Dry (26#)		

Y = Thickness of Insulation where Specified



Wall Number	Interior Construction	Y	Thickness of Concrete Blocks - X			
			6"	8"	10"	12"
			a	b	c	d
100	Plain Walls – No Interior Finish		0.446	0.377	0.327	0.287
101	½" Plaster on Concrete Blocks		0.408	0.348	0.305	0.271
102	¾" Plaster on Metal Lath – Furred		0.247	0.224	0.205	0.189
103	½" Plaster on Wood Lath – Furred		0.236	0.215	0.198	0.183
104	½" Plaster on ⅜" Plaster Board – Furred		0.246	0.223	0.204	0.188
105	½" Plaster on Wood Lath on 2" Furring Strips – Cellular Gypsum Fill	1⅝"*	0.182	0.169	0.158	0.149
106	½" Plaster on Wood Lath on 2" Furring Strips – Flaked Gypsum Fill	1⅝"*	0.171	0.159	0.150	0.141
107	½" Plaster on Fiber Insulation – (Board form) Furred	½"	0.183	0.170	0.159	0.149
108		1"	0.143	0.135	0.128	0.122
109	½" Plaster on Cork board set in ½" Cement Mortar	1½"	0.133	0.126	0.120	0.114
110		2"	0.109	0.104	0.100	0.096

*Based on 1⅝ in., the actual thickness of 2 in. furring strips.
†The figures on this page may be used with sufficient accuracy for concrete block walls with stucco exterior finish.
‡Resistance of hollow concrete blocks = $\left(\frac{1}{c} = \frac{1}{4.84}\right)$ assumed directly proportional to thickness as with solid homogeneous materials.
Note.—The coefficient used for plasterboard is 3.04 per inch thickness—recent data indicate values as low as 1.30 for this material.
Note.—The coefficient used for cellular gypsum, 0.59 is for 18 lb. weight—weights as low as 12 lb. may be used.

TABLE 8-A. COEFFICIENTS OF TRANSMISSION (*U*) OF VARIOUS TYPES OF FRAME WALL CONSTRUCTION

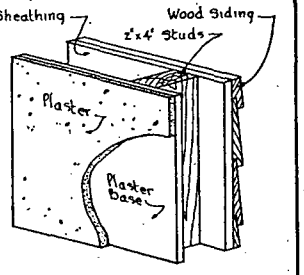
Note.—These coefficients are expressed in B.t.u. per hour per square foot per 1 deg. fahr. difference in temperature between the air on the two sides and are based on an outside wind exposure of 15 miles per hour.

WOOD SIDING OR CLAPBOARD WALLS †

The values of U in this Table are based on the following Internal Conductivities (C) which are expressed in B.t.u. per Hr. per Sq. Ft. per 1°F

Wood (Yellow Pine or Fir)	1.00	per 1"
Plaster (Gypsum)	2.32	per 1"
Wood Lath & Plaster	2.00	as applied
Plaster Board	3.04	per 1"
Cork board	0.30	per 1"
Fiber Insulation (Board form)	0.33	per 1"
Felt or Quilt Insulation (So/t)	0.27	per 1"
Cellular Gypsum (18#)	0.59	per 1"
Flaked Gypsum, Dry (26#)	0.52	per 1"

Typical Construction



Wall Number	Type of Sheathing	Insulation Between Studding	Plaster Base	Coefficient of Transmission U
111	Wood *	None	Wood Lath	0.227
112	Wood *	½" Felt or Quilt ‡ Insulation	Wood Lath	0.129
113	Wood *	½" Fiber Insulation ‡ (Board form)	Wood Lath	0.135
114	Wood *	Cellular Gypsum Fill **	Wood Lath	0.110
115	Wood *	Flaked Gypsum Fill **	Wood Lath	0.101
116	Wood *	None	1½" Cork board	0.110
117	Wood *	None	2" Cork board	0.093
117-A	Wood *	None	½" Fiber Insulation (Board form)	0.178
118	½" Fiber Insulation (Board form)	None	½" Fiber Insulation (Board form)	0.157
119	1" Fiber Insulation (Board form)	None	½" Fiber Insulation (Board form)	0.127
120	½" Fiber Insulation (Board form)	½" Fiber Insulation ‡ (Board form)	½" Fiber Insulation (Board form)	0.107
121	⅜" Plaster Board	None	⅜" Plaster Board	0.280

*Based on ⅝ in., the actual thickness of 1 in. or ¾ in. sheathing.
**Thickness of fill assumed 3⅝ in., based on 2 in. by 4 in. studding.
†Building paper neglected in computations in accordance with accepted practice.
‡Can also be applied on inside of studding with plaster base separated by furring strips.
Note.—The coefficient used for plasterboard is 3.04 per inch thickness—recent data indicate values as low as 1.30 for this material.
Note.—Plasterboard sheathing is now made in half inch thickness.
Note.—The coefficient used for cellular gypsum, 0.59 is for 18 lb. weight—weights as low as 12 lb. may be used.