

TABLE 6. CONDUCTANCES OF AIR SPACES^a AT VARIOUS MEAN TEMPERATURES

MEAN TEMP. DEG. FAHR.	CONDUCTANCE OF AIR SPACES FOR VARIOUS WIDTH IN INCHES						
	0.128	0.250	0.364	0.493	0.713	1.00	1.500
20	2.300	1.370	1.180	1.100	1.040	1.030	1.022
30	2.385	1.425	1.234	1.148	1.080	1.070	1.065
40	2.470	1.480	1.288	1.193	1.125	1.112	1.105
50	2.560	1.535	1.340	1.242	1.168	1.152	1.149
60	2.650	1.590	1.390	1.295	1.210	1.195	1.188
70	2.730	1.648	1.440	1.340	1.250	1.240	1.228
80	2.819	1.702	1.492	1.390	1.295	1.280	1.270
90	2.908	1.757	1.547	1.433	1.340	1.320	1.310
100	2.990	1.813	1.600	1.486	1.380	1.362	1.350
110	3.078	1.870	1.650	1.534	1.425	1.402	1.392
120	3.167	1.928	1.700	1.580	1.467	1.445	1.435
130	3.250	1.980	1.750	1.630	1.510	1.485	1.475
140	3.340	2.035	1.800	1.680	1.550	1.530	1.519
150	3.425	2.090	1.852	1.728	1.592	1.569	1.559

^aThermal Resistance of Air Spaces, By F. B. Rowley and A. B. Algren (JOURNAL, A. S. H. V. E., Vol. 35, No. 1, January, 1929).

mining overall coefficients of heat transmission of walls, floors, roofs and ceilings.

Computed Transmission Coefficients: As previously stated heat transmission coefficients of many common types of building construction are given in Tables 12 to 36, inclusive, each construction being identified by a serial number. For example: The coefficient of transmission (U) of a 12-in. brick wall, furring strips, and $\frac{3}{4}$ -in. of gypsum plaster on metal lath, is 0.216, and the number assigned to a wall of this construction is 3-B, Table 12.

The coefficients in these tables were determined by computations similar to those shown in Fig. 3, using the value of k (or C) indicated. The authorities for the conductivities used for computing these coefficients are given in Tables 7, 8, 9, 10 and 11. As in the case of the examples in Fig. 3, the average value of 1.34 given in Table 4 for f_i was used for all surfaces in still air. The value of f_o for outside wall and roof surfaces was taken as $3 \times f_i$, or 4.02, corresponding to a wind velocity of approximately 15 miles per hour. The conductance of air spaces $\frac{1}{2}$ in. or more in width was taken to be 1.10 B.t.u. per hour per square foot per degree fahrenheit difference between the two sides enclosing the air space. (See Table 6.)

Problems involving the determination of the value of U from the conductivity constants can also be solved by what is sometimes known as the resistance method which is readily derived from the basic equation No. 5 as follows:

$$\frac{1}{U} = \frac{1}{f_i} + \frac{1}{f_o} + \frac{x}{k} = \Sigma [R_i + R_o + R_r]$$

or

$$U = \frac{1}{\Sigma [R_i + R_o + R_r]}$$

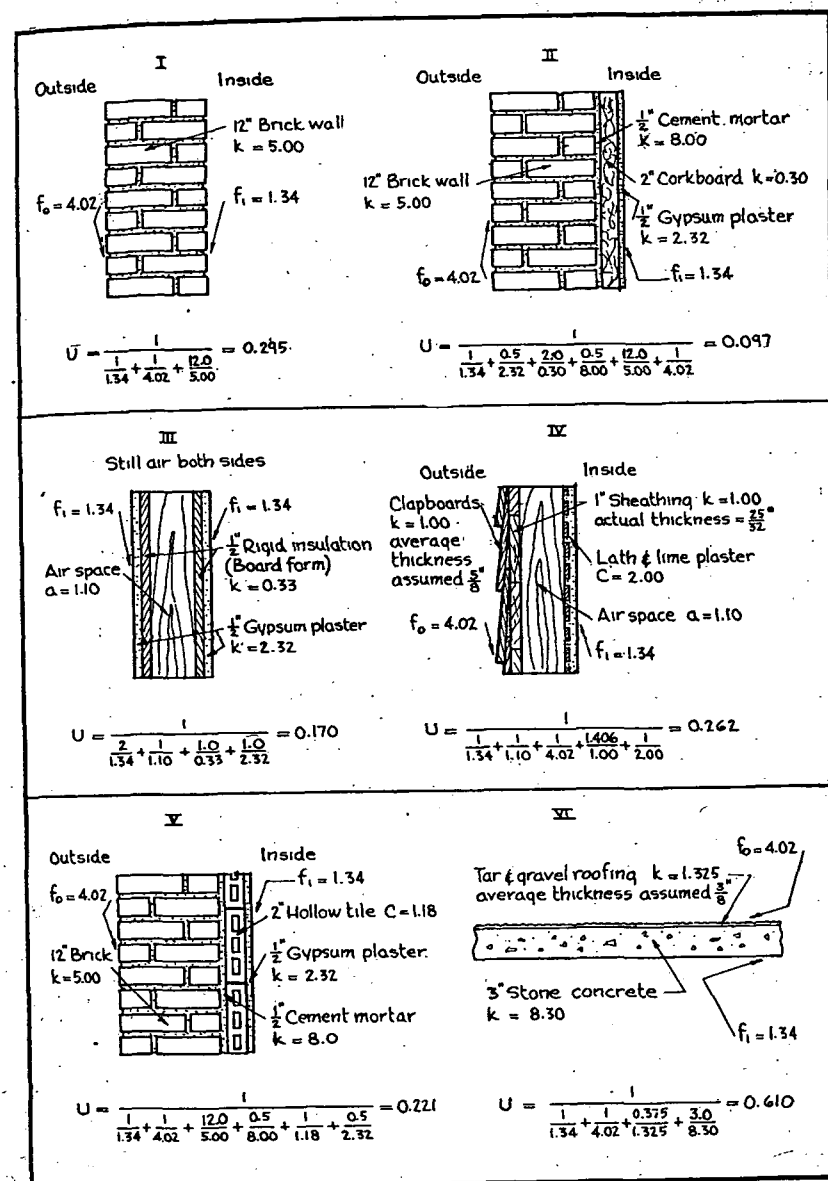


FIG. 3. EXAMPLES SHOWING METHOD OF COMPUTING HEAT TRANSMISSION COEFFICIENTS OF VARIOUS TYPES OF CONSTRUCTION