Houghten and C. C. Schrader, reported in TRANSACTIONS, A.S.H. & V.E., Vol. 30, 1924 and Vol. 31, 1925 and others, including the tests by F. C. Houghten and M. E. O'Connell reported in the JOURNAL, A. S. H. & V. E., Vol. 33, No. 11, papers by J. E. Emswiler and W. C. Randall recorded in the JOURNAL of the A. S. H. & V. E., Vol. 34, No. 6, and by F. C. Houghten and M. E. O'Connell recorded in the JOURNAL of the A. S. H. & V. E., Vol. 34, No. 7, may be conveniently adapted to calculation purposes. Similarly, for walls the tests by F. C. Houghten and M. Ingels reported in the JOURNAL, A. S. H. & V. E., Vol. 33, No. 4 may be used.

Table 15 as well as Figs. 4 and 6 present values from the tests by Houghten and Schrader at the Research Laboratory of the American Society of Heating and Ventilating Engineers at Pittsburgh. Table 16 is taken from the more recent tests made by Houghten and O'Connell on windows installed in the Southwestern Bell Telephone Company Building in St. Louis. The original report for the data of Table 15 and Fig. 4 is to be found in TRANSACTIONS, A. S. H. & V. E., Vol. 30, 1924, No. 686, p. 105, and for Fig. 6 the data were presented in the TRANSACTIONS, A. S. H. & V. E., Vol. 30, 1924, No. 704, p. 313. Table 16 is based on data reported in the JOURNAL, Vol. 33, No. 11. Table 17 is based on data obtained on walls at the Research Laboratory of the Society as reported in the JOURNAL, Vol. 33, No. 4. Figs. 7 and 8 are taken from the paper by W. M. Richtman and C. Braatz, "Effect of Frame Calking and Storm Windows on Infiltration Around and Through Windows," as reported in the JOURNAL, Vol. 34, No. 9.

Table 15 gives the leakage for a double-hung wood window not weatherstripped and the leakage for the same window fitted with a good weatherstrip for various wind velocities. Table 16 gives the leakage for double-hung metal windows weatherstripped and non-weatherstripped.

Table 17 gives the leakage through brick and wood frame walls, with and without plaster. In addition to the information in this table, the authors make the following statement: "In the case of walls with furring, lath, and plaster painted, walls plastered directly on the brick with or without paint or frame walls with plaster painted, the leakage is so small as to require about 0.10 of a square foot of radiation per 100 sq. ft. of wall, or in fact, it could be said that the heat loss due to infiltration of such walls is negligible."

Table 18 gives values for infiltration through steel windows of the rolled section type with pivoted or swinging ventilators, and is derived from data presented by Emswiler and Randall in the JOURNAL, Vol. 34, No. 6. The crack widths appearing in the Table are chosen as representative of a large number of measurements of installed steel windows of the type tested.

Table 19 presents some figures for infiltration through a steel window of the hollow metal vertically pivoted type tested in place in a building, by Houghten and O'Connell, and reported in the JOURNAL, Vol. 34, No. 7. The crack width was not given, but it was stated that the sash was not in good shape and fitted loosely in the frame.

Tables 15, 16, 17 and 18 are divided into two parts, the first part containing values based upon the original test data, and the second part

TABLE 15. INFILTRATION THROUGH DOUBLE HUNG WOOD SASH WINDOWS

	Wind Velocity Miles per Hour	Per Foot of Uncaulked Crack Around Frame*			Per Foot of Crack around the Sash including meeting rail for Cracks of 1/8 in. and 1/4 in. Clearance, Window Unlocked					
					Plain Non-Stripped Wood Window			Average Weatherstripped Window		
		Leakage Cu. Ft. per Hour.	Heat Loss B.t.u. per Hour 0-70 Deg. Fahr.	Sq. Ft. Radiation	Leakage Cu. Ft. per Hour	Heat Loss B.t.u. per Hour 0-70 Deg. Fahr.	Sq. Ft. Radiation	Leakage Cu. Ft. per Hour	Heat Loss B.t.u. per Hour 0-70 Deg. Fahr.	Sq. Ft. Radiation
PART I Values actually determined by Laboratory tests.	5.0	1.76	2.22	0.009	49.1	62.0	0.26	3.75	4.76	0.020
	7.5	7.95	10.1	0.042	78.6	99.1	0.42	8.52	10.8	0.045
	10.0	14.1	17.9	0.075	106.0	134.0	0.56	14.7	18.7	0.078
	15.0	28.3	35.9	0.15	155.0	196.0	0.82	28.6	36.4	0.15
	20.0	38.8	49.3	0.21	201.0	254.0	1.06	43.6	55.4	0.23
	30.0	67.1	85.3	0.36	291.0	367.0	1.54	74.5	93.9	0.39
	40.0	95.0	121.0	0.51	386.0	487.0	2.03	110.0	138.0	0.58
	50.0	111.0	141.0	0.59	488.0	615.0	2.56	146.0	185.0	0.78
PART II Values for practical use; average test values reduced by 20 per cent to allow for building up of pressure in room, etc.	5.0	1.41	1.77	0.007	39.3	49.5	0.21	3.00	3.80	0.016
	7.5	6.36	8.08	0.034	62.8	79.2	0.33	6.82	8.60	0.036
	10.0	11.3	14.3	0.060	84.9	107.0	0.45	11.7	14.9	0.062
	15.0	22.6	28.7	0.12	124.0	157.0	0.65	22.9	29.1	0.12
	20.0	31.1	39.4	0.16	161.0	203.0	0.85	34.9	44.3	0.19
	30.0	53.6	68.2	0.28	233.0	294.0	1.23	59.6	75.6	0.32
	40.0	76.0	96.5	0.40	309.0	390.0	1.63	87.8	111.0	0.46
	50.0	88.9	114.0	0.48	390.0	492.0	2.05	117.0	148.0	0.62

Notes.—A. The above table is approximately correct for cracks up to ¼ in.

B. The values given for the plain non-stripped wood window and for the weatherstripped window include the "elsewhere" leakage through the frame, but not the leakage through the uncaulked crack around the frame. If the frame is to be left uncaulked the loss under that heading should be included in the heat loss calculations.

*Practically all leakage around frames can be stopped by proper calking.