

Table of Estimated Radiation

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DOMESTIC ENGINEERING
Chicago

TABLE OF ESTIMATED RADIATION
STEAM

Sq. Ft. Glass	Sq. Ft. Radiation Required	Sq. Ft. Exposed Wall	Sq. Ft. Radiation Required	Cu. Ft. Con- tents	Sq. Ft. Radiation Required
4	2	10	1	350	3
6	3	20	2	400	3
7	3	30	3	450	3
8	3	40	4	500	4
9	4	50	5	550	4
10	4	60	6	600	4
12	5	70	7	650	5
14	5	80	8	700	5
16	6	90	9	750	5
18	7	100	10	800	6
20	7	110	10	850	6
22	8	120	11	900	6
24	9	130	12	950	7
26	9	140	13	1000	7
28	10	150	14	1100	8
30	11	160	15	1200	8
32	12	170	16	1300	9
34	12	180	17	1400	10
36	13	190	18	1500	10
38	14	200	19	1600	11
40	14	220	20	1700	12
42	15	240	22	1800	12
44	16	260	24	1900	13
46	16	280	26	2000	14
48	17	300	28	2100	14
50	18	320	30	2200	15
52	18	340	31	2300	16
54	19	360	33	2400	16
56	20	380	35	2500	17
58	20	400	37	2600	18
60	21	420	39	2700	18
62	22	440	40	2800	19
64	23	460	42	2900	20
66	23	480	44	3000	20
68	24	500	46	3200	22
70	25	520	48	3400	23
72	25	540	50	3600	24
74	26	560	51	3800	26
76	27	580	53	4000	27
78	27	600	55	4200	28
80	28	620	57	4400	30
82	29	640	59	4600	31
84	29	660	60	4800	32
86	30	680	62	5000	34
88	31	700	64	5200	35
90	32	720	66	5400	36
92	32	740	68	5600	38
94	33	760	70	5800	39
96	34	780	71	6000	40
98	34	800	73	6500	45
100	35	850	78	7000	48

Floors, ceilings or walls, over, under and adjoining unheated rooms should be figured as exposed walls.

TABLE OF ESTIMATED RADIATION
WATER

Sq. Ft. Glass	Sq. Ft. Radiation Required	Sq. Ft. Exposed Wall	Sq. Ft. Radiation Required	Cu. Ft. Contents	Sq. Ft. Radiation Required
4	2	10	2	350	4
6	3	20	3	400	4
7	4	30	4	450	5
8	4	40	5	500	5
9	5	50	7	550	6
10	5	60	8	600	6
12	6	70	9	650	7
14	7	80	10	700	7
16	8	90	12	750	8
18	9	100	13	800	8
20	10	110	14	850	9
22	11	120	15	900	9
24	12	130	17	950	10
26	13	140	18	1000	10
28	14	150	19	1100	11
30	15	160	20	1200	12
32	16	170	22	1300	13
34	17	180	23	1400	14
36	18	190	24	1500	15
38	19	200	25	1600	16
40	20	220	28	1700	17
42	21	240	30	1800	18
44	22	260	33	1900	19
46	23	280	35	2000	20
48	24	300	38	2100	21
50	25	320	40	2200	22
52	26	340	43	2300	23
54	27	360	45	2400	24
56	28	380	48	2500	25
58	29	400	50	2600	26
60	30	420	53	2700	27
62	31	440	55	2800	28
64	32	460	58	2900	29
66	33	480	60	3000	30
68	34	500	63	3200	32
70	35	520	65	3400	34
72	36	540	68	3600	36
74	37	560	70	3800	38
76	38	580	73	4000	40
78	39	600	75	4200	42
80	40	620	78	4400	44
82	41	640	80	4600	46
84	42	660	83	4800	48
86	43	680	85	5000	50
88	44	700	88	5200	52
90	45	720	90	5400	54
92	46	740	93	5600	56
94	47	760	95	5800	58
96	48	780	98	6000	60
98	49	800	100	6500	65
100	50	850	107	7000	70

For room in attic, under roof with no ceiling, figure roof as exposed wall and add 50% to radiation. (Exposed wall only.)

Computed on a basis of 180 deg. at boiler for water and 2 lb. pressure at boiler for steam. Sufficient radiation is given to provide 1 change of air per hour, with an inside temperature of 70 deg. (outside, zero) at sea level: (Prevailing winter wind, 12½ miles per hr. allowed for.)

Sufficient radiation also is provided to take care of the average dwelling where the heat is allowed to go down at night, or where windows in sleeping rooms are allowed to remain open all night.

Based on standard rules of efficiency of

3 col. C. I. Steam radiation as 220 B. t. u. per sq. ft. per hr.	} Water 160°
2 col. C. I. Steam radiation as 230 B. t. u. per sq. ft. per hr.	
1 col. C. I. Steam radiation as 250 B. t. u. per sq. ft. per hr.	

Add:	{ For direct-indirect radiation...	50%	
	{ For indirect radiation.....	100%	
	{ To rooms on windward side....	10%	(for extreme expo-
	{ For poor frame construction...	50%	sure only)
	{ For poorly fitted windows.....	50%	
	{ For 1½ changes of air per hour	50%	
	{ For 2 changes of air per hour..	100%	

For intermittent heat (churches, halls, etc.), add 50%.

For every 500 ft. above sea level, add 1½%.

With a lower outside temperature (inside at 70 deg.) for varying temperatures.

5 deg. below zero	Add	10%
10 deg. below zero	"	20%
15 deg. below zero	"	25%
20 deg. below zero	"	30%
25 deg. below zero	"	35%
30 deg. below zero	"	45%
35 deg. below zero	"	50%

To obtain a higher inside temperature (with outside at zero).

75 deg.	Add	10%
80 deg.	"	20%
85 deg.	"	30%
90 deg.	"	40%
95 deg.	"	50%
100 deg.	"	60%

Deduct:	{ For sleeping rooms.....	25%
	{ For double windows.....	50% of glass only.
	{ For 1-6 in. brick walls.....	10% of exposed wall only.
	{ For 20-in. brick walls.....	20% of exposed wall only.
	{ For east and south exposure..	10% of exposed wall only

If heated day and night, deduct 10%.