

TABLE 4. MAXIMUM ALLOWABLE CAPACITIES OF UP-FEED RISERS FOR ONE-PIPE LOW PRESSURE STEAM

Based on A. S. H. V. E. Research Laboratory Tests

PIPE SIZE	VELOCITY FEET PER SECOND	PRESSURE DROP OUNCES PER 100 FT.	CAPACITY		
			Sq. Ft. Radiation	B.t.u. per Hour	Lb. Steam per Hour
A	B	C	D	E	F
1"	14.1	0.68	45	10,961	11.3
1 1/4"	17.6	0.66	98	23,765	24.5
1 1/2"	20.0	0.66	152	36,860	38.0
2"	23.0	0.57	288	69,840	72.0
2 1/2"	26.0	0.54	464	112,520	116.0
3"	29.0	0.48	799	193,600	199.8
3 1/2"	31.0	0.44	1144	277,000	286.0
4"	32.0	0.39	1520	368,000	380.0

Note 1.—Above capacities should never be exceeded on one-pipe risers.

Note 2.—Capacities based on 1/4 lb. condensation per square foot equivalent radiation and actual diameter of standard pipe.

Note 3.—All pipe should be well reamed and free from constrictions. Fittings should be up to size. (See Tables 18, 19 and 20.)

TABLE 5. MAXIMUM ALLOWABLE CAPACITIES OF UP-FEED RISERS FOR TWO-PIPE LOW PRESSURE STEAM

Based on A. S. H. V. E. Research Laboratory Tests

PIPE SIZE	VELOCITY FEET PER SECOND	PRESSURE DROP OUNCES PER 100 FT.	CAPACITY		
			Sq. Ft. Radiation	B.t.u. per Hour	Lb. Steam per Hour
A	B	C	D	E	F
3/4"	20		40	9550	10.0
1"	23	1.78	74	17,900	18.45
1 1/4"	27	1.57	151	36,500	37.65
1 1/2"	30	1.48	228	55,200	57.0
2"	35	1.33	438	106,100	109.5
2 1/2"	38	1.16	678	164,100	169.4
3"	41	0.95	1129	273,500	282.2
3 1/2"	42	0.81	1548	375,500	387.0
4"	43	0.71	2042	495,000	510.5

Note 1.—Above capacities should never be exceeded on two-pipe risers.

Note 2.—Capacities based on 1/4 lb. condensation per square foot equivalent radiation and actual diameter of standard pipe.

Note 3.—All pipe should be well reamed and free from constrictions. Fittings should be up to size. (See Tables 18, 19 and 20.)

TABLE 6. LENGTH IN FEET OF PIPE TO BE ADDED TO ACTUAL LENGTH OF RUN TO OBTAIN EQUIVALENT LENGTH

SIZE OF PIPE	ST'D. ELBOW	SIDE OUTLET TEE	GATE VALVE	GLOBE VALVE	ANGLE VALVE
	Length in Feet to be Added in Run				
2"	5	16	2	18	9
2 1/2"	7	20	3	25	12
3"	10	26	3	33	16
3 1/2"	12	31	4	39	19
4"	14	35	5	45	22
5"	18	44	7	57	28
6"	22	50	9	70	32
7"	26	55	10	82	37
8"	31	63	12	94	42
9"	35	69	13	105	47
10"	39	76	15	118	52
12"	47	90	18	140	63
14"	53	105	20	160	72

Example of length in feet of pipe to be added to actual length of run.

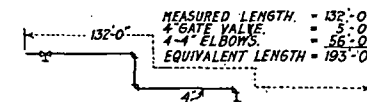


TABLE 7. CONSTANTS FOR VARIOUS LENGTHS AND INITIAL PRESSURES

STEAM PRESSURE GAGE LB.	CONSTANT BY WHICH TO MULTIPLY CAPACITY OF ANY PIPE FOR 1 LB. GAGE STEAM PRESSURE TO OBTAIN CAPACITY OF SAME PIPE FOR PRES- SURE IN COL. 1	LENGTH OF PIPE FT.	CONSTANT BY WHICH TO MULTIPLY CAPACITY OF 100 FT. PIPE TO OBTAIN CAPACITY OF SAME SIZED PIPE WITH SAME PRESSURE, AND LENGTH AS GIVEN IN COL. A
Col. 1	Col. 2	Col. A	Col. B
0	0.92	20	2.240
1	1.00	40	1.580
2	1.03	60	1.290
5	1.11	80	1.120
10	1.24	100	1.000
15	1.35	120	0.912
20	1.45	140	0.841
30	1.63	160	0.793
40	1.79	180	0.741
50	1.94	200	0.710
60	2.08	250	0.632
75	2.26	300	0.578
100	2.54	350	0.538
125	2.79	400	0.500
150	3.02	450	0.477
175	3.23	500	0.447
200	3.44	600	0.407
...	...	700	0.378
...	...	800	0.354
...	...	900	0.333
...	...	1000	0.316
...	...	1400	0.267