

TABLE 1. COLD WATER BRANCH SUPPLY SIZES FOR FIXTURES AND MAXIMUM FLOW IN GALLONS PER MINUTE

	NUMBER OF FIXTURES									
	1	2	4	8	12	16	24	32	40	
Water Closets—										
Gal. per Min.	8	16	24	48	60	80	96	128	150	Tanks
Pipe Size	1/2	3/4	1	1 1/4	1 1/4	1 1/2	2	2	2	Flush
Gal. per Min.	30	50	80	120	140	160	200	250	300	Valves
Pipe Size	1	1 1/4	1 1/2	2	2	2	2 1/2	2 1/2	2 1/2	
Urinals—										
Gal. per Min.	6	12	20	32	42	56	72	90	120	Tanks
Pipe Size	1/2	3/4	1	1 1/4	1 1/4	1 1/2	2	2	2	Flush
Gal. per Min.	25	37	45	75	85	100	125	150	175	Valves
Pipe Size	1	1 1/4	1 1/4	1 1/4	1 1/4	2	2	2	2	
Lavatories and Wash Sinks—										
Based upon Each Faucet										
Gal. per Min.	4	8	12	24	30	40	48	64	75	
Pipe Size	1/2	1/2	3/4	1	1	1 1/4	1 1/4	1 1/4	1 1/4	
Bath Tubs—										
Gal. per Min.	15	30	40	80	96	112	144	192	240	
Pipe Size	3/4	1	1 1/4	1 1/4	2	2	2	2 1/4	2 1/4	
Shower Baths—										
Gal. per Min.	8	16	32	64	96	128	192	256	320	8" rain
Pipe Size	1/2	3/4	1 1/4	1 1/4	2	2	2 1/4	2 1/4	3	Head
Acid and Slop Sinks, Manufacturing,										
Kitchen and Laundry—										
Gal. per Min.	15	25	40	64	84	96	120	150	200	per bibb
Pipe Size	3/4	1	1 1/4	1 1/4	1 1/4	2	2	2	2 1/4	per bibb

Note.—The above sizes are based upon a pressure drop of 30 lb. per 100 ft.

In estimating risers and mains, the number of gallons for W. C. and urinals where flush valves are used are to be as given for tanks.

The hot-water faucets are to be disregarded when estimating cold-water risers and mains.

TABLE 2. COLD WATER SUPPLY RISERS FOR BUILDINGS OTHER THAN RESIDENCES

	G. P. M.	G. P. M.	PIPE SIZE WITH DROP PER 100 FT. RUN		
			5 lb.	10 lb.	20 lb.
10th Story	100 x 0.60	60% = 60	2"	2"	1 1/2"
10 and 9	200 x 0.60	90% = 108	2 1/4"	2 1/4"	1 1/2"
10 and 9 and 8	300 x 0.60	80% = 144	3"	2 1/2"	2"
10 to 7 incl.	400 x 0.60	70% = 168	3 1/2"	3"	2 1/4"
10 " 6 "	500 x 0.60	60% = 180	3 1/2"	3"	2 1/4"
10 " 5 "	600 x 0.60	50% = 180	3 1/2"	3"	2 1/4"
10 " 4 "	700 x 0.60	40% = 184	3 1/2"	3"	2 1/4"
10 " 3 "	800 x 0.60	40% = 192	3 1/2"	3"	2 1/4"
10 " 2 "	900 x 0.60	40% = 216	3 1/2"	3"	2 1/4"
10 " 1 "	1000 x 0.60	40% = 240	3 1/2"	3"	2 1/4"

Note.—For residences, use Table 1, and for the main supply use 25 per cent of total of gallons used by fixtures and then take pipe size from Table 5 on a basis of 10 lb. pressure drop per 100 ft. or less if water supply pressure is less than 50 lb.

Table 1 gives the amount of water in gallons which should flow per minute for the number of fixtures indicated of each different type, together with the branch pipe size necessary to carry this amount of water with a pressure drop of 30 lb. per 100 ft. of run.

The volume of water required per fixture is reduced as the number of fixtures in each group is increased, to take care of the factor of probable use.

For size of mains for residences, ascertain the total number of gallons per minute, connected load, from Table 1. Select the pipe diameter from

TABLE 3. APARTMENT HOUSE SUPPLY RISERS
Based upon One, Two, and Three Baths per Apartment

ONE (1) BATH APARTMENT		TWO (2) BATH APARTMENT		THREE (3) BATH APARTMENT	
1 bath	15 gal.	2 baths	24 gal.	3 baths	30 gal.
1 W. C.	8 gal.	2 W. C.	14 gal.	3 W. C.	18 gal.
1 sink	4 gal.	1 sink	4 gal.	1 sink	4 gal.
1 lav.	4 gal.	2 lavs.	6 gal.	3 lavs.	9 gal.
	31 gals.		48 gals.		61 gals.
50% demand—15 gals. per min.		40%—20 gals. per min.		40%—24 gals. per min.	
Top Floor	15 gal.	Riser		Riser	
Next	28 "	1 1/4"	20 gal.	1 1/4"	24 gal.
"	38 "	1 1/4"	38 "	1 1/2"	43 "
"	51 "	2"	54 "	2"	64 "
"	60 "	2"	68 "	2"	82 "
"	67 "	2"	80 "	2"	96 "
"	71 "	2"	90 "	2"	108 "
"	78 "	2"	98 "	2 1/2"	117 "
"	81 "	2"	104 "	2 1/2"	124 "
"	83 "	2"	108 "	2 1/2"	134 "
"	84 "	2"	110 "	2 1/2"	143 "
"	85 "	2"	110 "	2 1/2"	143 "

Note.—The pipe sizes are based upon a drop of 10 lb. water pressure for each 100 ft. run. The size of branch for each Apartment should be not less than 1 1/4 in.

TABLE 4. APARTMENT HOUSES. SIZES OF WATER SUPPLY MAINS AND METERS

Based upon pressure drop of 10 lb. per 100 ft. run

FOR 4 AND 5 STORIES

Apartments per Story

	FOUR		SIX		EIGHT		TEN	
	Gal.	Main	Gal.	Main	Gal.	Main	Gal.	Main
1 bath.....	120	2 1/2"	160	3"	200	3"	240	3"
2 baths.....	160	3"	200	3"	240	3"	280	3"
3 baths.....	200	3"	240	3"	280	3"	320	3 1/2"

FOR 6, 7 AND 8 STORIES

1 bath.....	150	2 1/2"	190	3"	230	3"	270	3"
2 baths.....	190	3"	230	3"	270	3"	310	3 1/2"
3 baths.....	230	3"	270	3"	310	3 1/2"	350	3 1/2"

FOR 9, 10, 11 AND 12 STORIES

1 bath.....	200	3"	250	3"	300	3 1/2"	350	3 1/2"
2 baths.....	250	3"	300	3 1/2"	350	3 1/2"	400	3 1/2"
3 baths.....	300	3 1/2"	350	3 1/2"	400	3 1/2"	450	4"

Note.—This table gives the sizes of mains for apartment houses of one, two or three baths for each apartment, and with four, six, eight or ten apartments per story and from four to twelve stories in height.

Note.—The gallons per minute given in this table are approximated maximum demand for conditions stated.