

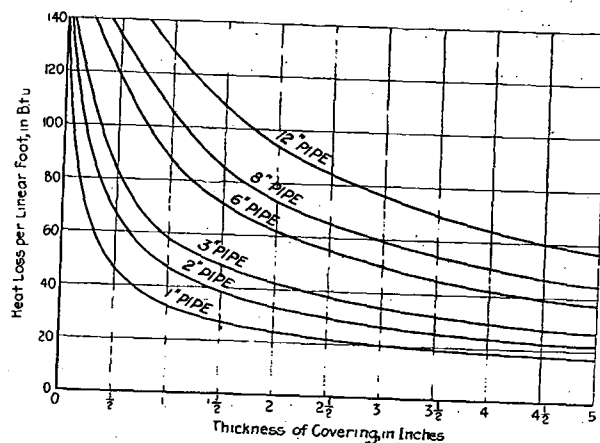


Fig. 7 shows graphically the effect of different sizes of pipe with different thicknesses of covering on the heat loss.

In the paper as presented before the Society, the author gives complete mathematical derivations for all cases and for different types of covering such as those made up of several materials and those which are made of various materials combined with air spaces.

For the complete paper (See Transactions, Volume 26, page 335, 1920).

WATER PIPE SIZES FOR PLUMBING FIXTURES, BRANCHES AND MAINS

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THE lack of data upon which to base water pipe sizes for plumbing fixtures, branches and mains is probably due to the great number of variables which enter into their proper determination.

Plumbing fixtures in common use, having what is known as good water flow, deliver the quantities of water per outlet as given in the accompanying Table 1.

PLUMBING

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

	Number of Fixtures									
Water Closets	1	2	4	8	12	16	24	32	40	
Gal. per min.	8	16	24	48	60	80	96	128	150	Tanks
Pipe size	$\frac{1}{2}$	$\frac{1}{2}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	2	2	
Gal. per min.	30	50	80	120	140	160	200	250	300	Flush
Pipe size	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$	2 $\frac{1}{2}$	Valves
Urinals										
Gal. per min.	6	12	20	32	42	56	72	90	120	Tanks
Pipe size	$\frac{1}{2}$	$\frac{1}{2}$	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2	
Gal. per min.	5	37	45	75	85	100	125	150	175	Flush
Pipe size	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	2	2	2	Valves
Lavatories and Wash Sinks —based upon each faucet										
Gal. per min.	4	8	12	24	30	40	48	64	75	
Pipe size	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{3}{4}$	1	1	1 $\frac{1}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	
Bath Tubs										
Gal. per min.	15	30	40	80	96	112	144	192	240	
Pipe size	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$	
Shower Baths										
Gal. per min.	8	16	32	64	96	128	192	256	320	8" rain
Pipe size	$\frac{1}{2}$	$\frac{3}{4}$	1 $\frac{1}{4}$	1 $\frac{1}{2}$	2	2	2 $\frac{1}{2}$	2 $\frac{1}{2}$	3	head
Acid and Slop Sinks, Manu- facturing, Kitchen and Laundry										
Gal. per min.	15	25	40	64	84	96	120	150	200	per bibb
Pipe size	$\frac{3}{4}$	1	1 $\frac{1}{4}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	2	2	2	2 $\frac{1}{2}$	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 risers and mains.

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