

Open Type Utensil Sterilizers

SIZES IN IN.	INTERNAL CAPACITY CU. IN.	POUNDS OF STEAM PER STERILIZATION	WATTS REQUIRED IN WIRING
16" x 15" x 20"	4800	30	4400
20" x 20" x 24"	9600	50	6600

Open Type Instrument Sterilizers

8" x 9" x 18"	1296	6	2200
9" x 10" x 20"	1800	8	2200
10" x 12" x 22"	2640	10	4400
12" x 16" x 24"	4608	16	4400

*Water Sterilizers**(Steam and watts are for each reservoir)*

6 gal.		15	3000
10 gal.		25	6000
15 gal.		37½	6000
20 gal.		50	12000
25 gal.		62½	12000
35 gal.		87½	18000
50 gal.		125	24000

This condenser exhaust is a part of the fixture, when used, and generally requires to waste over an open funnel, also part of the fixture, leading to the plumbing system waste through a suitable trap or connected to waste pipe from sterilizer chamber, between chamber and trap. Where separately connected a 1¼ in. trap should be provided although the outlet of the funnel is smaller than that size. The purpose of the open funnel is to prevent the creation of a pressure on the plumbing system which is not permissible.

A ½ in. water supply connection should be made to each sterilizer provided with this ejector. Such a pipe will carry a large number of such ejectors for the reason that the operation requires only a short time and more than one sterilizer will seldom be ejecting at the same time. Any pressure above 25 lb. per square inch will operate these ejectors, the higher the pressure the more efficiently the work is done and the less the water is required. Cold water only is used.

CHAPTER XX

WATER SUPPLY SYSTEMS AND PIPING FOR BUILDINGS

Cold Water Supply, Risers and Connections, Pipe Sizes, Hot Water Supply, Sizes of Mains.

THE following gives a great deal of reliable data upon which to base water pipe sizes for plumbing fixtures, branches and mains, the former lack of which data has probably been 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 Table 1.

Water flowing in pipes is retarded by friction, the extent of which depends upon the velocity, which is the cause of unsatisfactory service when pipes are too small. The amount of head necessary to overcome this friction is known as the friction head, which is usually expressed in feet. It is also known as pressure drop, usually expressed in pounds per square inch per 100 ft. of pipe. The total pressure needed to discharge a given quantity of water is the pressure necessary to overcome friction in the pipes (when horizontal) plus the static pressure when the discharge is higher than the supply.

Table 6 gives the water pressure required to deliver water to the top of a fixture up to 150 ft. in height, with 15 lb. pressure at the top branch. This table also gives the water pressure in pounds required to give adequate service at various vertical heights up to 150 ft.

The underlying principle involved in determining the proper pipe sizes for mains, risers and branches is to so regulate the size of these pipes that they will carry the maximum amount of water required of them and absorb by friction and static head, all the pressure at the source and still deliver water at the fixture in sufficient quantity but at a pressure practically equalling zero or slightly above except that due to velocity of flow through the fixture.

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.

In estimating the pipe size for any part of a riser in a building of several stories, take 60 per cent of the water to be used on any floor and all floors above as determined from Table 1 and deduct 10 per cent for each floor

Material for this section was originally compiled for THE GUIDE by the late W. S. Timmis and has been revised for this edition by the following committee: Prof. S. E. Dibble, chairman; H. H. Angus, C. E. Hanson and Prof. G. L. Larson.