PLAINTIFF'S EXHIBIT

CAP-823

AWWA C800–55

AWWA STANDARD

for

THREADS FOR UNDERGROUND SERVICE LINE FITTINGS

This "Standard for Threads for Underground Service Line Fittings" is based upon a study of patterns for service line fittings now used widely in the water works field in North America. Should a purchaser wish to standardize his purchases in accordance with the dimensions given herein, he may do so by referring the manufacturer to this document (AWWA C800) and by naming the item or items he wishes to purchase.

Manufacturers are expressly advised that the term "AWWA Standard Threads for Service Line Fittings" can be applied only to fittings which conform to the dimensions herein.

Adopted Jointly by

American Water Works Association
New England Water Works Association

Approved as Standard by AWWA
September 1, 1948, and by NEWWA September 14, 1948. Revised January 17, 1955

AMERICAN WATER WORKS ASSOCIATION
Incorporated
2 Park Avenue, New York, N.Y. 10016

AWWA Standard for

Threads for Underground Service Line Fittings

Section 1-1—General

1.1. The fittings covered by these specifications are those in general use in the water works field for the installation of corporation stops in water mains and the service pipe extending from the main into the customer's premises up to the building stop.

1.2. Unless otherwise specifically directed by the purchaser, the service line fittings shall be of "ounce metal," containing 85 per cent copper and 5 per cent each of tin, lead, and zinc (ASTM B62).

Section 1-2—Description of Threads

Sec. 1-2.1—Drawings

2.1.1. All dimensions of threads shall be in accordance with the details given in Fig. 1-9, which form a part of these specifications.

2.1.2. The profiles shown in drawings are pictorial only, and producer's standards are to be furnished unless otherwise specified by the purchaser.

Sec. 1-2.2—Design Standards

2.2.1. The thread form shall be the same as that used on American National Taper Pipe Threads as approved by the American Standards Association, December 1945, and designated as ASA-B2.1-1945.

2.2.2. All starting threads shall be chamfered in accordance with the manufacturer's standard practice.

2.2.3. Thread forms for all straight threads in copper and lead services (Fig. 2-8) shall be in accordance with American National standards, with tolerances approximating Class 2, and allowances as indicated.

2.2.4. Wherever tapered iron pipe threads are called for, they shall conform to American Standard ASA-B2.1-1945.

2.2.5. A number of other fittings are used in underground water service, such as adapters for changing from lead service to copper service, copper service to iron pipe, and so on. Such fittings shall be furnished with threads made in accordance with the standard established for each service. No separate drawings of these threads are included in this standard.

2.2.6. If the purchaser specifies a wood screw thread on the inlet end of the corporation stop, it shall be made in accordance with the producer's standards.

2.2.7. On corporation stops, any plain extension at the inlet end shall be in addition to the thread length *L* as shown on Fig. 1.

2.2.8. The standard corporation stop thread shown in Fig. 1 is the one most extensively used on the inlet end of the corporation stop in American water works practice.*

2.2.9. In gaging A.W.W.A. standard thread, the thread is within tolerances when the gaging face is within one turn of being flush with the end of the thread.

2.2.10. If the purchaser specifies that the corporation stop furnished shall be finished with a tapered iron pipe thread, this thread shall conform to ASA-B2.1-1945 (as stated in Sec. 1-2.2.4 of these specifications), with the extra thread added at the large end of the corporation stop.

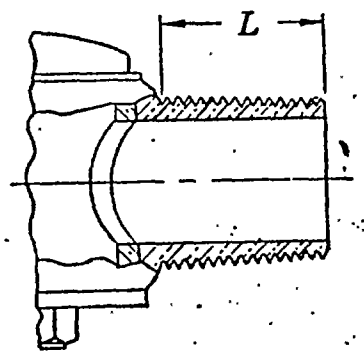
* This thread is commonly known to the trade as the Mueller Thread.

TABLE 1

Standard Corporation Stop Thread

Nominal Size	Threads per inch	Taper per foot	Diameters at Small End			Length L (min.)
			Major	Pitch	Minor	
in.		in.	in.	in.	in.	in.
¾	14	1¼	1.104	1.047	0.990	1⅛
1	12	1¼	1.332	1.265	1.198	1 5/16
1¼	11½	1	1.728	1.658	1.588	1⅝
1½	11½	1	2.004	1.934	1.864	1½
2	11½	1	2.577	2.507	2.437	1 13/16

This thread is for use on the inlet end.



1. Standard Corporation Stop Thread

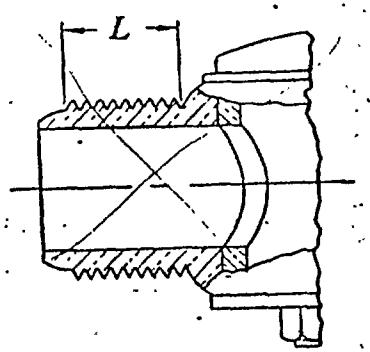


FIG. 2. Fitting Thread for Use With Flared Copper Service Tubes, Type K

TABLE 2

Fitting Thread for Use With Flared Copper Service Tubes, Type K

Nominal Size	Threads per inch	Major		Pitch		Minor Diam. (max.)	Length L (min.)
		Diam.	Tol.	Diam.	Tol.		
in.		in.	in.	in.	in.	in.	in.
¾	14	1.259	−0.010	1.213	−0.006	1.171	⅛
1	11½	1.593	−0.015	1.536	−0.008	1.486	¼
1¼	11½	2.055	−0.015	1.998	−0.008	1.948	1
1½	11½	2.465	−0.015	2.408	−0.008	2.358	1 1/16
2	11½	3.185	−0.015	3.128	−0.008	3.078	1 1/16

External thread is designed for the external coupling threads of corporation stops, curb ps and adapters for use with flared copper service tubes, Type K.

Internal driving thread shall be provided in copper service corporation stops only when so ed. Such threads shall conform to Fig. 8.

TABLE 3

Coupling Nut for Use With Flared Copper Service Tubes, Type K

Nominal Size	Threads per inch	Major Diam. (min.)	Pitch		Minor		Length L (min.)
			Diam.	Tol.	Diam.	Tol.	
in.		in.	in.	in.	in.	in.	in.
¾	14	1.266	1.220	+0.006	1.189	+0.008	⅜
1	11½	1.603	1.546	+0.008	1.509	+0.010	½
1¼	11½	2.065	2.008	+0.008	1.971	+0.010	1
1½	11½	2.475	2.418	+0.008	2.381	+0.010	1 1/16
2	11½	3.195	3.138	+0.008	3.101	+0.010	1 1/16

This thread is designed for all internal threads in fittings for use with flared copper service tubes, Type K.

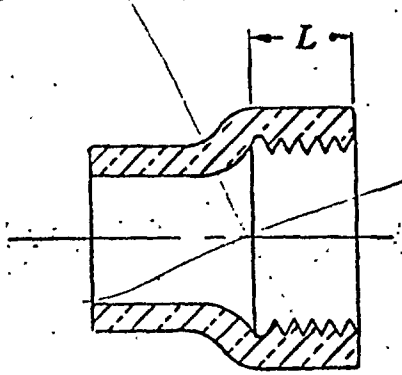


FIG. 3. Coupling Nut for Use With Flared Copper Service Tubes, Type K

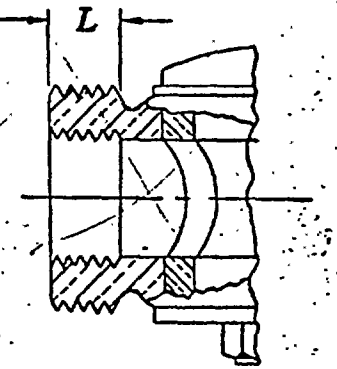


FIG. 4. Fitting Thread for Use With Extra Strong Lead Flanged Pipe

TABLE 4

Fitting Thread for Use With Extra Strong Lead Flanged Pipe

Nominal Size	Threads per inch	Major		Pitch		Minor Diam. (max.)	Length L (min.)
		Diam.	Tol.	Diam.	Tol.		
in.		in.	in.	in.	in.	in.	in.
¾	12	1.843	−0.015	1.789	−0.008	1.741	⅜
1	12	2.158	−0.015	2.104	−0.008	2.056	9/16
1¼	10	2.526	−0.015	2.461	−0.011	2.403	⅝
1½	10	2.794	−0.015	2.729	−0.011	2.671	11/16
2	10	3.357	−0.015	3.292	−0.011	3.234	¾

External thread is designed for corporation stops, curb stops, and fittings used with extra strong lead flanged pipe.

Internal thread for driving is for corporation stops only and shall conform to Fig. 8.