

COPPER TUBE AND FITTINGS

- ANSI/ASTM-B32 –Covers Solder for use with Copper Tube.
- ASTM-B75 –Covers Seamless Copper Tube.
- ASTM-B88 –Covers Seamless Copper Water Tube (Types K, L, M).
- ASTM-B280 –Covers Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.
- ASTM-B306 –Covers Copper Drainage Tube (DWV).
- ANSI-B16.18 –Covers Cast Solder Type Pressure Fittings.
- ASME-ANSI-B16.22 –Covers Wrot Solder Type Pressure Fittings.
- ANSI-B16.23 –Covers DWV Cast Solder Type Fittings.
- ASME/ANSI-B16.29-Covers DWV Type Fittings.
- ANSI/ASME-B16.32 –Covers Cast Bronze Solder Type Fittings for Solvent[®] drainage Systems.

The following government Specification applies to copper:

- WW-T-725-Tube Fitting, Copper and Copper Alloy, Wrought or Cast, Solder Ends.
- WW-T-799-Tube, Copper Seamless.

Scope: This specification covers seamless copper water tubing in sizes suitable for general plumbing, commonly used with solder, flared or compression type fittings.

Types and classes: Seamless copper tube shall be of the following types and classes as specified:

- Type K-For solder-type or flared-tube 1" Fittings.¹
- Type L-For solder-type or flared-tube 1" Fittings.¹
- Type M-For solder-type fitting only.
- Form A-Straight length.
- Form B-Coiled length.

¹ Only if soft tempered or annealed ends

Type K (Color Code Green)

For underground service, general plumbing, heating and cooling systems, gas, oxygen, steam, oil and water lines*, both hard and soft temper, hard and soft in 20 ft. lengths. Soft 1 1/4" and smaller-50 and 100 ft. coils, soft 1 1/2"-60 ft. coils, soft 2"-40 ft. coils.

Type L (Color Code Blue)

For interior plumbing and heating and cooling applications. Gas, steam, oxygen and water lines*, both hard and soft temper, hard and soft in 20 ft. lengths, soft 1 1/4" and smaller-60 and 100 ft. coils, soft 1 1/2"-60 ft. coils. Soft 2-40 ft. coils.

Type M (Color Code Red)

For interior hot and cold water lines, hot water and low pressure steam heating lines, chilled water lines and interior waste and drainage lines/fire sprinkler lines*, hard drawn only-20 ft. lengths.

DWV (Color Code Yellow)

For above ground drainage, waste and vent lines*, for some chilled water mains/fire sprinkler, hard drawn only-20 ft. lengths.

* Application dependent upon pressure/temperature rating of the tube as well as the strength and pressure temperature ratings of the fittings and solder used, subject to code approval.

Table I –SIZES AND WEIGHTS OF COPPER TUBE

Standard Size. (Inches)	Actual Outside Diameter (Inches)	Theoretical Inside Diameter (Inches)				Wall Thickness (Inches)				Theoretical Pounds Per Linear Foot			
		Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV	Type K	Type L	Type M	Type DWV
1/4	0.375	0.305	0.315	0.325	–	0.035	0.030	0.025	–	0.145	0.126	0.106	–
3/8	0.500	0.402	0.430	0.450	–	0.049	0.035	0.025	–	0.269	0.198	0.145	–
1/2	0.625	0.527	0.545	0.569	–	0.049	0.040	0.028	–	0.344	0.285	0.204	–
5/8	0.750	0.652	0.666	0.690	–	0.049	0.042	0.030	–	0.418	0.362	0.263	–
3/4	0.875	0.745	0.785	0.811	–	0.065	0.045	0.032	–	0.641	0.455	0.328	–
1	1.125	0.995	1.025	1.055	–	0.065	0.050	0.035	–	0.839	0.655	0.465	–
1 1/4	1.375	1.245	1.265	1.291	1.295	0.065	0.055	0.042	0.040	1.04	0.884	0.682	0.650
1 1/2	1.625	1.481	1.505	1.527	1.541	0.072	0.060	0.049	0.042	1.36	1.14	0.940	0.809
2	2.125	1.959	1.985	2.009	2.041	0.083	0.070	0.058	0.042	2.06	1.75	1.460	1.07
2 1/2	2.625	2.435	2.465	2.495	–	0.095	0.080	0.065	–	2.93	2.48	2.030	–
3	3.125	2.907	2.945	2.981	3.035	0.109	0.090	0.072	0.045	4.00	3.33	2.680	1.69
3 1/2	3.625	3.385	3.425	3.459	–	0.120	0.100	0.083	–	5.12	4.29	3.580	–
4	4.125	3.857	3.905	3.935	4.009	0.134	0.110	0.095	0.058	6.51	5.38	4.660	2.87
5	5.125	4.805	4.875	4.907	4.981	0.160	0.125	0.109	0.072	9.67	7.61	6.660	4.43
6	6.125	5.741	5.845	5.881	5.959	0.192	0.140	0.122	0.083	13.9	10.2	8.920	6.10
8	8.125	7.583	7.725	7.785	7.907	0.271	0.200	0.170	0.109	25.9	19.3	16.500	10.6
10	10.125	9.449	9.625	9.701	–	0.338	0.250	0.212	–	40.3	30.1	25.600	–
12	12.125	11.315	11.565	11.617	–	0.405	0.280	0.254	–	57.8	40.4	36.700	–