



CRANE COPPER TUBE

Crane Enfield Metals Pty. Limited

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Crane Enfield Metals Pty. Limited

ASTM B88

Copper Water and Gas Tube, This specification covers Hard Drawn temper, seamless copper tubes which are suitable for use in General Plumbing applications, such as underground water service, portable water distribution, gas distribution and fire sprinkler installation.

Type K

Nominal Size, Inches	Dimension, Inches			Calculated Values, Based on ASME B31				Nominal Weight, Kilograms per Metre
	Actual		Wall Thickness	* Rated internal working pressures, psi				
	Outside Diameter	Diameter		Service Temperature				
			Up to 150° F		Up to 300° F			
			Annealed	Hard Drawn	Annealed	Hard Drawn		
1/4	.375	3/8"	.035	913	2029	842	1974	0.216
3/8	.500	1/2"	.049	979	2135	902	2077	0.400
1/2	.625	5/8"	.049	769	1683	709	1638	0.512
5/8	.750	3/4"	.049	633	1389	583	1351	0.623
3/4	.875	7/8"	.065	735	1609	662	1566	0.955
1	1.125	1 1/8"	.065	563	1236	520	1203	1.249
1 1/4	1.375	1 3/8"	.065	456	1003	420	976	1.544
1 1/2	1.625	1 5/8"	.072	424	933	391	908	2.028
2	2.125	2 1/8"	.083	372	820	343	798	3.074
2 1/2	2.625	2 5/8"	.095	341	751	314	731	4.359
3	3.125	3 1/8"	.109	330	579	304	560	5.962
3 1/2	3.625	3 5/8"	.120	313	549	288	531	7.628
4	4.125	4 1/8"	.134	308	540	283	522	9.699
5	5.125	5 1/8"	.160	295	517	272	500	14.407
6	6.125	6 1/8"	.192	296	520	272	502	20.659
8	8.125	8 1/8"	.271	315	554	290	535	38.600

Type L

1/4	.375	3/8"	.030	775	1722	714	1676	0.188
3/8	.500	1/2"	.035	662	1471	610	1431	0.295
1/2	.625	5/8"	.040	614	1362	565	1325	0.425
5/8	.750	3/4"	.042	536	1192	494	1160	0.539
3/4	.875	7/8"	.045	495	1099	456	1069	0.667
1	1.125	1 1/8"	.050	420	933	387	908	0.975
1 1/4	1.375	1 3/8"	.055	373	828	344	806	1.317
1 1/2	1.625	1 5/8"	.060	347	771	319	750	1.703
2	2.125	2 1/8"	.070	309	686	285	667	2.609
2 1/2	2.625	2 5/8"	.080	286	633	263	616	3.692
3	3.125	3 1/8"	.090	269	476	248	449	4.954
3 1/2	3.625	3 5/8"	.100	258	456	238	441	6.393
4	4.125	4 1/8"	.110	249	440	229	425	8.010
5	5.125	5 1/8"	.125	229	404	211	391	11.353
6	6.125	6 1/8"	.140	213	376	197	364	15.196
8	8.125	8 1/8"	.200	230	406	211	393	28.745

Type M

3/8	.500	1/2"	.025	485	1077	446	1048	0.215
1/2	.625	5/8"	.028	420	932	387	907	0.303
3/4	.875	7/8"	.032	346	769	319	748	0.489
1	1.125	1 1/8"	.035	286	636	264	619	0.692
1 1/4	1.375	1 3/8"	.042	287	638	265	621	1.015
1 1/2	1.625	1 5/8"	.049	281	625	259	608	1.400
2	2.125	2 1/8"	.058	254	563	234	548	2.174
2 1/2	2.625	2 5/8"	.065	233	517	215	503	3.018
3	3.125	3 1/8"	.072	215	380	198	367	3.986
3 1/2	3.625	3 5/8"	.083	214	378	197	366	5.332
4	4.125	4 1/8"	.095	313	377	197	365	6.943
5	5.125	5 1/8"	.109	198	349	182	337	9.915
6	6.125	6 1/8"	.122	185	328	171	317	13.282
8	8.125	8 1/8"	.170	195	344	179	333	24.525

* ANNEALED S = 5100 psi, HARD DRAWN S = 11300 psi, FOR SIZES 1/4" TO 2 1/2" NOMINAL

S = 8700 psi FOR SIZES OVER 2 1/2" NOMINAL, AS THESE SIZES ARE NOT NORMALLY AVAILABLE IN THE ANNEALED FORM AND ARE NOT THEREFORE COVERED BY ASME.



Crane Enfield Metals Pty. Limited

Australian Standard AS1571 - 1985

Copper - Seamless tubes for airconditioning and refrigeration

Size (mm)	Annealed Coil		Safe Working Pressure KPa			
	Inches & SWG	Nominal Kg/m	SD= 33.9 50-75°C	SD= 32.7 100-125°C	SD= 28.0 150-175°C	SD= 21.9 175-200°C
4.8 x 0.91	3/16" x 20	0.098	13940	13450	11520	9000
4.8 x 0.71	3/16" x 22	0.081	10400	10040	8600	6700
4.8 x 0.56	3/16" x 24	0.066	7950	7600	6560	5100
6.4 x 1.22	1/4" x 18	0.176	14040	13540	11600	9000
6.4 x 0.91	1/4" x 20	0.139	9950	9595	8215	6400
6.4 x 0.71	1/4" x 22	0.113	7520	7250	6200	4850
6.4 x 0.56	1/4" x 24	0.091	5795	5640	4830	3775
7.9 x 0.91	5/16" x 20	0.180	7840	7580	6470	5060
7.9 x 0.71	5/16" x 22	0.144	5965	5750	4920	3850
7.9 x 0.56	5/16" x 24	0.116	4620	4450	3800	2980
9.5 x 0.91	3/8" x 20	0.221	6395	6170	5280	4100
9.5 x 0.71	3/8" x 22	0.176	4890	4700	4030	3150
9.5 x 0.56	3/8" x 24	0.141	3795	3660	3130	2450
12.7 x 0.91	1/2" x 20	0.302	4670	4500	3860	3020
12.7 x 0.81	1/2" x 21	0.271	4125	3980	3400	2665
12.7 x 0.71	1/2" x 22	0.239	3590	3460	2965	2320
12.7 x 0.56	1/2" x 24	0.191	2800	2700	2315	1810
15.9 x 0.91	5/8" x 20	0.383	3680	3550	3040	2380
15.9 x 0.81	5/8" x 21	0.343	3250	3140	2690	2100
15.9 x 0.71	5/8" x 22	0.303	2840	2740	2340	1830
15.9 x 0.56	5/8" x 24	0.241	2220	2144	1835	1435
19.1 x 0.91	3/4" x 20	0.464	3030	2930	2500	1960
19.1 x 0.71	3/4" x 22	0.366	2340	2260	1940	1500
22.2 x 0.91	7/8" x 20	0.545	2595	2500	2145	1670
Straight Lengths						
6.4 x 0.91	1/4" x 20	0.139	9950	9590	8200	6425
9.5 x 0.71	3/8" x 20	0.221	6395	6170	5280	4130
12.7 x 1.02	1/2" x 19	0.335	5280	5095	4360	3400
12.7 x 0.91	1/2" x 20	0.302	4670	4500	3860	3020
15.9 x 0.91	5/8" x 20	0.383	3680	3550	3040	2380
19.1 x 1.02	3/4" x 19	0.416	3420	3300	2825	2200
19.1 x 0.91	3/4" x 20	0.464	3035	2930	2500	1960
22.2 x 1.22	7/8" x 18	0.721	3525	3400	2900	2280
22.2 x 0.91	7/8" x 20	0.545	2600	2500	2145	1675
25.4 x 1.22	1" x 18	0.829	3060	2950	2530	1980
25.4 x 0.91	1" x 20	0.626	2260	2180	1865	1460
28.6 x 1.22	1 1/8" x 18	0.938	2700	2600	2235	1750
28.6 x 0.91	1 1/8" x 20	0.708	2000	1925	1650	1290
31.8 x 1.22	1 1/4" x 18	1.047	2425	2340	2000	1565
31.8 x 0.91	1 1/4" x 20	0.789	1790	1725	1480	1155
34.9 x 1.22	1 3/8" x 18	1.156	2200	2125	1820	1420
34.9 x 0.91	1 3/8" x 20	0.870	1630	1570	1345	1050
38.1 x 1.22	1 1/2" x 18	1.265	2010	1940	1660	1300
38.1 x 0.91	1 1/2" x 20	0.951	1490	1435	1230	960
41.3 x 1.22	1 5/8" x 18	1.373	1850	1785	1530	1195
41.3 x 0.91	1 5/8" x 20	1.032	1370	1320	1130	885
44.5 x 1.22	1 3/4" x 18	1.483	1700	1650	1415	1100
44.5 x 0.91	1 3/4" x 20	1.114	1270	1225	1050	820
50.8 x 1.63	2" x 16	2.253	2015	1945	1665	1300
50.8 x 1.22	2" x 18	1.700	1495	1445	1235	965
50.8 x 0.91	2" x 20	1.276	1110	1070	915	715
54.0 x 1.63	2 1/8" x 16	2.398	1890	1825	1560	1220
54.0 x 1.22	2 1/8" x 18	1.809	1400	1350	1160	900
54.0 x 0.91	2 1/8" x 20	1.357	1045	1000	860	675
66.7 x 1.63	2 5/8" x 16	2.981	1520	1470	1260	985
66.7 x 1.22	2 5/8" x 18	2.245	1135	1095	935	730
76.2 x 1.63	3" x 16	3.417	1330	1280	1100	860
101.6 x 1.63	4" x 16	4.581	990	955	820	640

* Safe working pressures calculated for annealed copper.

$$PSW = \frac{2000 \times SD \times tm}{D}$$

SD = MAXIMUM ALLOWABLE DESIGN STRESS FOR ANNEALED COPPER IN MEGA PASCALS

tm = MINIMUM THICKNESS ANY POINT, mm

D = MAXIMUM MEAN OUTSIDE DIAMETER, mm

Imperial Standard Wire Gauges (SWG)

SWG No.	in	mm	SWG No.	in	mm	SWG No.	in	mm
16	0.064	1.63	19	0.040	1.02	22	0.028	0.71
17	0.056	1.42	20	0.036	0.91	23	0.024	0.61
18	0.048	1.22	21	0.032	0.81	24	0.022	0.56

ASTM B280

Seamless Copper Tube for Air Conditioning and Refrigeration Field Service

Standard sizes and data for annealed coil copper tubes

Standard Size, in.	Outside Diameter in. (mm)	Wall Thickness in. (mm)	Weight, lb/ft (kg/m)	Nominal Weight, kgs 15 Metres	* Safe Working Internal Pressure PSI (KPa) 150°F
3/16	0.187 (4.76)	0.030 (0.76)	0.0575 (0.086)	1.28	1690 (11650)
1/4	0.250 (6.35)	0.030 (0.76)	0.0804 (0.120)	1.80	1230 (8480)
5/16	0.312 (7.92)	0.032 (0.81)	0.109 (0.162)	2.43	1040 (7170)
3/8	0.375 (9.52)	0.032 (0.81)	0.134 (0.199)	2.98	860 (5930)
1/2	0.500 (12.7)	0.032 (0.81)	0.182 (0.271)	4.07	630 (4344)
5/8	0.625 (15.9)	0.035 (0.89)	0.251 (0.373)	5.62	540 (3723)
3/4	0.750 (19.1)	0.035 (0.89)	0.305 (0.454)	6.81	440 (3034)
3/4	0.750 (19.1)	0.042 (1.07)	0.362 (0.539)	8.09	535 (3690)
7/8	0.875 (22.2)	0.045 (1.14)	0.455 (0.677)	10.16	500 (3450)
1 1/8	1.125 (28.6)	0.050 (1.27)	0.665 (0.975)	14.62	430 (2965)
1 3/8	1.375 (34.9)	0.055 (1.40)	0.884 (1.317)	19.75	390 (2690)

* Computed allowable stress for annealed copper tubes at the indicated temperature as determined from ASME B31.

Standard sizes and data for hard drawn straight length copper tubes

Standard Size, in.	Outside Diameter in. (mm)	Wall Thickness in. (mm)	Weight, lb/ft (kg/m)	Nominal Weight, kgs 5.8 Metres	* Safe Working Internal Pressure PSI (KPa) 150°F
3/8	0.375 (9.52)	0.030 (0.76)	0.126 (0.187)	1.09	810 (5585)
1/2	0.500 (12.7)	0.035 (0.89)	0.198 (0.295)	1.71	675 (4654)
5/8	0.625 (15.9)	0.040 (1.02)	0.285 (0.424)	2.46	625 (4310)
3/4	0.750 (19.1)	0.042 (1.07)	0.362 (0.539)	3.13	545 (3758)
7/8	0.875 (22.2)	0.045 (1.14)	0.455 (0.677)	3.92	495 (3415)
1 1/8	1.125 (28.6)	0.050 (1.27)	0.655 (0.975)	5.65	440 (3035)
1 3/8	1.375 (34.9)	0.055 (1.40)	0.884 (1.317)	7.65	385 (2655)
1 5/8	1.625 (41.3)	0.060 (1.52)	1.14 (1.703)	9.85	355 (2450)
2 1/8	2.125 (54.0)	0.070 (1.78)	1.75 (2.609)	15.13	315 (2170)
2 5/8	2.625 (66.7)	0.080 (2.03)	2.48 (3.692)	21.42	295 (2035)
3 1/8	3.125 (79.4)	0.090 (2.29)	3.33 (4.954)	28.73	275 (1895)
3 5/8	3.625 (92.1)	0.100 (2.54)	4.29 (6.393)	37.08	270 (1860)
4 1/8	4.125 (104.8)	0.110 (2.79)	5.38 (8.010)	46.45	255 (1760)

* Computed allowable stress for annealed copper tubes at the indicated temperature as determined from ASME B31.

Cleaness

Tubes are cleaned, evaporated and capped to meet the requirements of the standard. Hot solvent wash ensures that surfaces are oil free, with any residue not exceeding 0.038g/m² when tested to Clause 12 of ASTM B280.

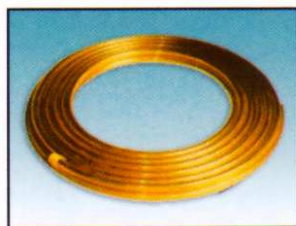
Copper

Tubes are manufactured from copper which meets the chemical requirements of Copper UNS No. C12200 (Copper (Including Silver) 99,9 % min, Phosphorus 0.015 - 0.040%)

PRODUCT TYPES



STRAIGHT LENGTHS



PANCAKE COILS



LEVEL WOUND COILS



COPPER FITTING

For further information, please contact :



PT. ADIMAS ISOLASITAMA
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