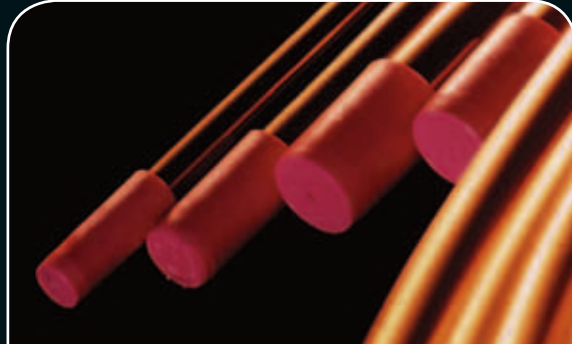
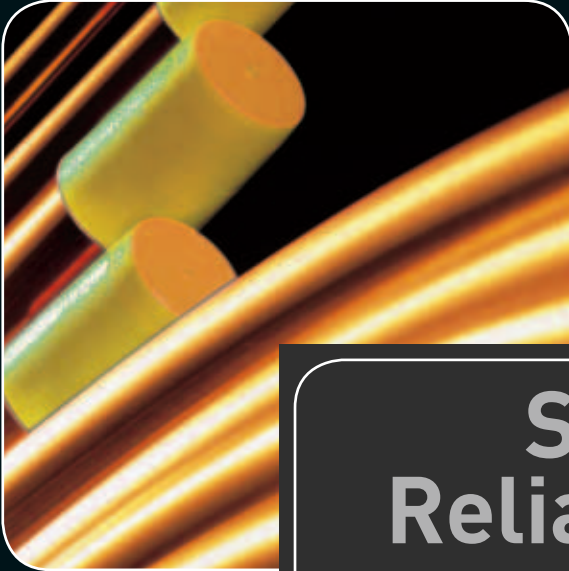




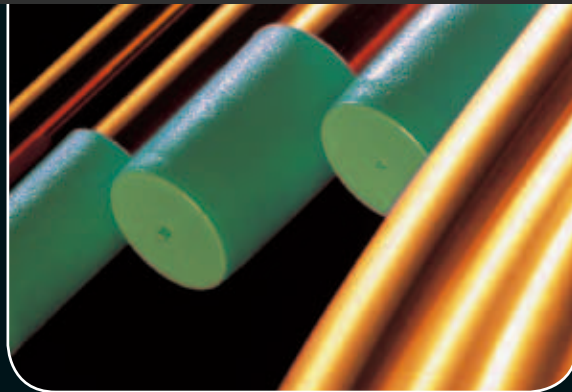
Crane Copper Tube

COPPER TUBING → REFRIGERATION & MEDICAL GAS TUBING → AS/NZS 1571



Superior Quality & Reliable Performance

AIR-CONDITIONING, REFRIGERATION
AND MEDICAL GAS COPPER TUBE





Crane Copper Tube manufactures and distributes a wide range of refrigeration, air-conditioning and medical gas tube. Crane copper tube is manufactured in accordance with Australian Standard AS/NZS 1571 Copper – Seamless tubes for Air-conditioning and Refrigeration.

Material

Code	Copper Alloy No.	Chemical requirement
AS/NZS 1571	C122	Cu 99.9%, P 0.015-0.040%

Tolerances

All Crane Copper Tube is manufactured to the highest standard with the wall thickness within a tolerance of $\pm 10\%$ as specified by AS/NZS 1571.

Cleanliness

All tube is cleaned and samples tested to meet the residue requirements of 0.038g/m^2 as specified by AS/NZS 1571.

Tube Integrity

All Crane Copper Tube is electronically tested by Eddy Current method to insure tube integrity as part of Crane's quality system.

Working pressures

Safe working pressures for copper tube are calculated on the basis of annealed temper tube with the maximum allowable outside diameter and minimum wall thickness, thus allowing for softening of the tube due to brazing or heating. All safe working pressures are based on the following formula:

$$P_{sw} = \frac{2000 \times S_D \times t_m}{D - t_m}$$

Where:

P_{sw} = safe working pressure (kPa)

S_D = maximum allowable design stress for annealed copper (MPa)

t_m = minimum wall thickness of tube (mm)

D = outside diameter of tube (mm)

Interpolation of allowable design stress as defined by table D7 of AS4041 for below temperatures

Temperature (°C)	50.0	55.0	60.0	65.0	70.0
S_D (MPa)	41	39.6	38.2	36.8	35.4



Air-conditioning and Refrigeration Grade Tube

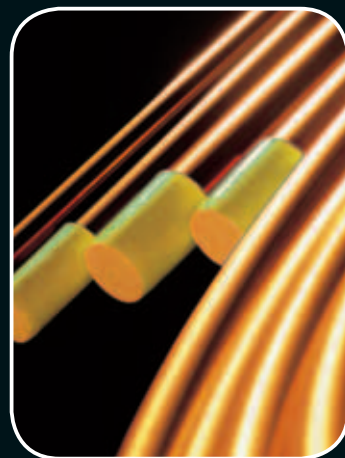
Capping

Crane Copper Tube standard Air-conditioning and Refrigeration grade copper tube is distinguished by yellow coloured capping.

Ink Marking

The tube is also identified with ink marking along its length stating the Manufacturer's Name, Country of Origin, Conforming Standard, Temper and Size.

eg: "CRANE COPPER TUBE AUSTRALIA AS/NZS 1571 ½H 19.05 x 0.91"



R410A Rated Tube

Crane Copper has extended its range of refrigeration tube with the introduction of R410A rated copper tube. The R410A rated copper tube is especially designed to comply with AS4041 Pressure Piping Code. Our R410A rated copper tube is capable of withstanding working pressures of 4131kPa when the refrigerant is operating at a temperature of 65°C, which is the recommended operating temperature as per AS/NZS 1677 Refrigerating systems.

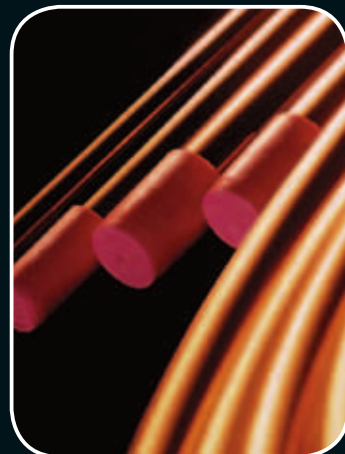
Capping

The R410A rated copper tube is distinguished by rose coloured capping.

Ink Marking

The tube is also identified with ink marking along its length stating the Manufacturer's Name, Country of Origin, Conforming Standard, Temper, Size and Special usage.

eg: "CRANE COPPER TUBE AUSTRALIA AS/NZS 1571 ½H 12.7 x 0.91 R410A RATED"



Medical Gas Grade Copper Tube

Crane Copper offers a range of copper tube for use in Medical Gas applications. Medical Gas copper tube has specific internal cleanliness standards that require the tube to go through a degreasing, cleaning, checking, additional cleaning and checking if required before being capped.

Medical Gas grade tube has the same size, configuration and temper as the standard refrigeration grade tube but with the additional markings and green capping to indicate its specialist use.

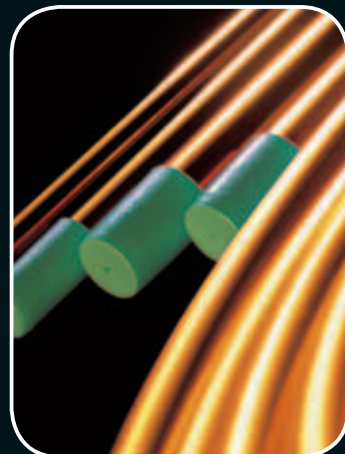
Capping

The medical gas copper tube is distinguished by green coloured capping.

Ink Marking

The tube is also identified with ink marking along its length stating the Manufacturer's Name, Country of Origin, Conforming Standard, Temper, Size and Special usage.

eg: "CRANE COPPER TUBE AUSTRALIA AS/NZS 1571 H 28.6 x 0.91 MEDICAL GAS"



Straight Seamless Tubes for Air-conditioning and Refrigeration

Australian Standard AS/NZS 1571

Standard sizes and data for straight copper tubes

Crane Item Number	Outside Diameter (mm)	Wall Thickness (mm)	Imperial Equivalent O.D. and swg	Nominal Weight (kg/m)	Form	Temper	Safe working pressure (kPa) at service temperature				
							50 °C	55°C	60°C	65°C	70°C
50126051	6.35	0.81	1/4" x 21	0.126	6m straight	H	10635	10272	9908	9545	9182
50125945	9.53	0.81	3/8" x 21	0.198	6m straight	H	6792	6560	6328	6096	5864
50125987	12.70	0.81	1/2" x 21	0.270	6m straight	1/2 H	4994	4823	4653	4482	4312
*	12.70	0.91	1/2" x 20	0.301	6m straight	1/2 H	5653	5460	5267	5074	4880
50103079	12.70	1.02	1/2" x 19	0.335	6m straight	1/2 H	6389	6171	5953	5735	5516
50103131	15.88	0.91	5/8" x 20	0.383	6m straight	1/2 H	4459	4307	4155	4002	3850
50103132	15.88	1.02	5/8" x 19	0.426	6m straight	1/2 H	5031	4859	4688	4516	4344
50103163	19.05	0.91	3/4" x 20	0.464	6m straight	1/2 H	3684	3558	3432	3306	3181
50103170	19.05	1.02	3/4" x 19	0.517	6m straight	1/2 H	4152	4010	3868	3726	3585
50143509	19.05	1.14	3/4" x 18.5	0.573	6m straight	1/2 H	4668	4508	4349	4190	4030
50103200	22.23	0.91	7/8" x 20	0.545	6m straight	1/2 H	3137	3030	2922	2815	2708
50103210	22.23	1.22	7/8" x 18	0.720	6m straight	1/2 H	4261	4115	3970	3824	3679
50160354	22.23	1.42	7/8" x 17	0.830	6m straight	H	5002	4831	4660	4489	4319
50106468	25.40	0.91	1" x 20	0.626	6m straight	H	2732	2639	2546	2452	2359
*	25.40	1.22	1" x 18	0.829	6m straight	H	3705	3578	3452	3325	3199
50103232	25.40	1.63	1" x 16	1.088	6m straight	H	5026	4855	4683	4511	4340
50103253	28.57	0.91	1 1/8" x 20	0.707	6m straight	H	2420	2337	2255	2172	2089
50103256	28.57	1.22	1 1/8" x 18	0.937	6m straight	H	3277	3165	3054	2942	2830
50103263	28.57	1.83	1 1/8" x 15	1.374	6m straight	H	5016	4845	4674	4502	4331
50106469	31.75	0.91	1 1/4" x 20	0.788	6m straight	H	2171	2097	2023	1949	1875
*	31.75	1.22	1 1/4" x 18	1.046	6m straight	H	2937	2837	2737	2636	2536
50103272	31.75	2.03	1 1/4" x 14	1.694	6m straight	H	5007	4836	4665	4494	4323
50103274	34.92	0.91	1 3/8" x 20	0.869	6m straight	H	1969	1902	1835	1768	1700
50106470	34.92	1.22	1 3/8" x 18	1.155	6m straight	H	2662	2571	2480	2389	2298
# 50103284	34.92	2.03	1 3/8" x 14	1.875	6m straight	H	4527	4372	4218	4063	3909
*	38.10	0.91	1 1/2" x 20	0.951	6m straight	H	1801	1740	1678	1617	1555
50106471	38.10	1.22	1 1/2" x 18	1.264	6m straight	H	2433	2350	2267	2184	2101
50106406	41.27	0.91	1 5/8" x 20	1.032	6m straight	H	1660	1604	1547	1490	1433
*	41.27	1.22	1 5/8" x 18	1.372	6m straight	H	2241	2165	2088	2012	1935
# 50103310	41.27	2.41	1 5/8" x 12.5	2.630	6m straight	H	4549	4393	4238	4083	3927
*	44.45	0.91	1 3/4" x 20	1.113	6m straight	H	1539	1487	1434	1382	1329
*	44.45	1.22	1 3/4" x 18	1.481	6m straight	H	2077	2006	1935	1864	1793
*	50.80	0.91	2" x 20	1.275	6m straight	H	1344	1298	1252	1206	1160
*	50.80	1.22	2" x 18	1.699	6m straight	H	1812	1750	1688	1626	1564
*	50.80	1.63	2" x 16	2.251	6m straight	H	2438	2355	2272	2189	2105
*	53.97	0.91	2 1/8" x 20	1.356	6m straight	H	1264	1220	1177	1134	1091
50106460	53.97	1.22	2 1/8" x 18	1.807	6m straight	H	1703	1645	1587	1528	1470
50103330	53.97	1.63	2 1/8" x 16	2.396	6m straight	H	2291	2213	2135	2056	1978
50106461	66.68	1.22	2 5/8" x 18	2.243	6m straight	H	1373	1326	1279	1232	1185
*	66.68	1.63	2 5/8" x 16	2.978	6m straight	H	1845	1782	1719	1656	1593
*	76.20	1.63	3" x 16	3.414	6m straight	H	1610	1555	1500	1445	1390
*	101.60	1.63	4" x 16	4.577	6m straight	H	1201	1160	1119	1078	1037

Denotes R410A tube requires safety shut off limit of 3800kPa

* Denotes tube made to order where minimum order quantities required

■ Denotes R410A rated tube

Annealed Seamless Tubes for Air-conditioning and Refrigeration

Australian Standard AS/NZS 1571

Standard sizes and data for annealed copper tubes

Crane Item Number	Outside Diameter (mm)	Wall Thickness (mm)	Imperial Equivalent O.D. and swg	Nominal Weight (kg/m)	Form		Temper	Safe working pressure (kPa) at service temperature				
								50 °C	55°C	60°C	65°C	70°C
*	4.76	0.56	3/16" x 24	0.066	30m	Coil	0	9711	9379	9047	8716	8384
*	4.76	0.71	3/16" x 22	0.081	30m	Coil	0	12715	12281	11847	11412	10978
50102950	4.76	0.91	3/16" x 20	0.098	30m	Coil	0	17041	16459	15877	15295	14713
*	6.35	0.56	1/4" x 24	0.091	30m	Coil	0	7069	6828	6587	6345	6104
*	6.35	0.71	1/4" x 22	0.112	30m	Coil	0	9175	8862	8548	8235	7922
50126050	6.35	0.81	1/4" x 21	0.126	30m	Coil	0	10635	10272	9908	9545	9182
*	6.35	1.22	1/4" x 18	0.176	30m	Coil	0	17143	16558	15972	15387	14802
*	7.94	0.56	5/16" x 24	0.116	30m	Coil	0	5558	5368	5178	4988	4799
*	7.94	0.71	5/16" x 22	0.144	30m	Coil	0	7177	6932	6687	6442	6197
50126052	7.94	0.81	5/16" x 21	0.162	30m	Coil	0	8290	8007	7724	7441	7158
*	9.53	0.56	3/8" x 24	0.141	18m	Coil	0	4579	4422	4266	4110	3953
*	9.53	0.71	3/8" x 22	0.176	18m	Coil	0	5893	5692	5491	5290	5088
50125936	9.53	0.81	3/8" x 21	0.198	18m	Coil	0	6792	6560	6328	6096	5864
*	12.70	0.56	1/2" x 24	0.191	18m	Coil	0	3389	3273	3157	3042	2926
*	12.70	0.71	1/2" x 22	0.239	18m	Coil	0	4344	4196	4048	3899	3751
*	12.70	0.81	1/2" x 21	0.270	18m	Coil	0	4994	4823	4653	4482	4312
50125935	12.70	0.81	1/2" x 21	0.270	18m	Coil	0	4994	4823	4653	4482	4312
*	12.70	0.91	1/2" x 20	0.301	18m	Coil	0	5653	5460	5267	5074	4880
*	15.88	0.56	5/8" x 24	0.241	18m	Coil	0	2688	2596	2504	2412	2321
*	15.88	0.71	5/8" x 22	0.303	18m	Coil	0	3438	3321	3203	3086	2968
*	15.88	0.81	5/8" x 21	0.343	18m	Coil	0	3945	3811	3676	3541	3407
50103130	15.88	0.91	5/8" x 20	0.383	18m	Coil	0	4459	4307	4155	4002	3850
50103134	15.88	1.02	5/8" x 19	0.426	18m	Coil	0	5031	4859	4688	4516	4344
*	19.05	0.71	3/4" x 22	0.366	18m	Coil	0	2846	2749	2652	2554	2457
50103159	19.05	0.91	3/4" x 20	0.464	18m	Coil	0	3684	3558	3432	3306	3181
50143512	19.05	1.14	3/4" x 18.5	0.573	18m	Coil	0	4668	4508	4349	4190	4030
50103198	22.23	0.91	7/8" x 20	0.545	18m	Coil	0	3137	3030	2922	2815	2708

* Denotes tube made to order where minimum order quantities required

■ Denotes R410A rated tube

American Standard ASTM B280 – Seamless Copper Tubes for Air-conditioning and Refrigeration

Crane Copper Tube also offer a range of American sized copper tube for use in air-conditioning, refrigeration, R410A and medical gas applications.

Contact your local Crane Copper Tube sales office for more information.

Pressure Temperature Conversion Chart

The table below gives values of saturated vapour pressures of some of the most common refrigerants. This table is supplied for guidance purposes only. Operating pressures for specific refrigerants should be obtained from your refrigerant supplier.

Temp	°C °F	45.0 113.0	50.0 122.0	55.0 131.0	60.0 140.0	65.0 149.0	70.0 158.0
R11	kPa	105.0	140.0	176.0	212.0	252.0	307.0
	psig	15.2	20.3	25.5	30.7	36.5	44.5
R12	kPa	981.0	1120.0	1268.0	1428.0	1586.0	1784.0
	psig	142.2	162.4	183.9	207.1	230.0	258.7
R123	kPa	78.0	114.0	147.0	182.0	228.0	276.0
	psig	11.3	16.5	21.3	26.4	33.1	40.0
R134a	kPa	1054.0	1234.0	1383.0	1571.0	1789.0	2016.0
	psig	152.8	178.9	200.5	227.8	259.4	292.3
R22	kPa	1649.0	1855.0	2095.0	2345.0	2592.0	2895.0
	psig	239.1	269.0	303.8	340.0	375.8	419.8
R404A	kPa	1967.0	2224.0	2503.0	2805.0	3093.0	3292.0
	psig	285.2	322.5	362.9	406.7	448.5	477.3
R407C	kPa	1735.0	1970.0	2235.0	2520.0	2933.0	3262.0
	psig	251.6	285.7	324.1	365.4	425.3	473.0
R408A	kPa	1822.0	2060.0	2319.0	2600.0	2842.0	3160.0
	psig	264.2	298.7	336.3	377.0	412.1	458.2
R409A	kPa	1037.0	1191.0	1363.0	1550.0	1990.0	2217.0
	psig	150.4	172.7	197.6	224.8	288.6	321.5
R410A	kPa	2609.0	2945.0	3308.0	3702.0	4131.0	4599.0
	psig	378.3	427.0	479.7	536.8	599.0	666.9
R502	kPa	1766.0	1977.0	2215.0	2475.0	2865.0	3090.0
	psig	256.1	286.7	321.2	358.9	415.4	448.1
R507	kPa	2021.0	2281.0	2572.0	2890.0	3236.0	3566.0
	psig	293.0	330.7	372.9	419.1	469.2	517.1

Information contained in this brochure is provided as a guide only. Crane copper does not warrant that the information is accurate or without error or omissions. Crane Copper reserves the right to correct any errors or misprints.

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