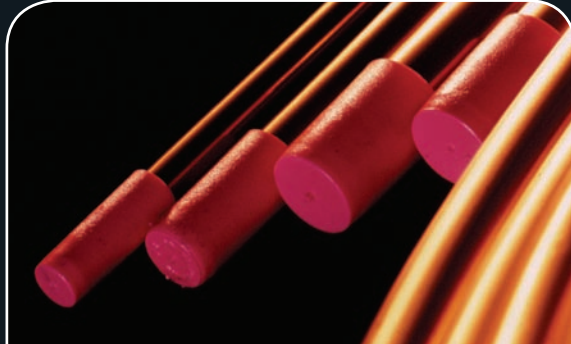




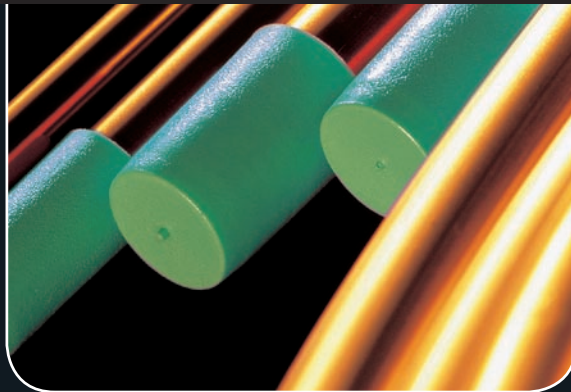
Crane Copper Tube

COPPER TUBING → TUBING SYSTEMS → REFRIGERATION TUBING → PAIR COIL



**Superior quality,
reliable performance**

**AIR-CONDITIONING, REFRIGERATION
AND MEDICAL GAS COPPER TUBE**



Crane Copper are manufacturers and international suppliers of a wide range of refrigeration, air-conditioning and medical gas tube. Crane manufactures their tube 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 ±10% as specified by AS/NZS 1571.

Cleanness

All tube is cleaned and samples tested to meet the residue requirements of 0.038g/m² 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	75.0
S_D (MPa)	41	38.6	36.83	35.55	34.63	34

Air-conditioning and Refrigeration Grade Tube

Capping

The standard Air-conditioning and Refrigeration grade copper tube is distinguished by yellow 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.

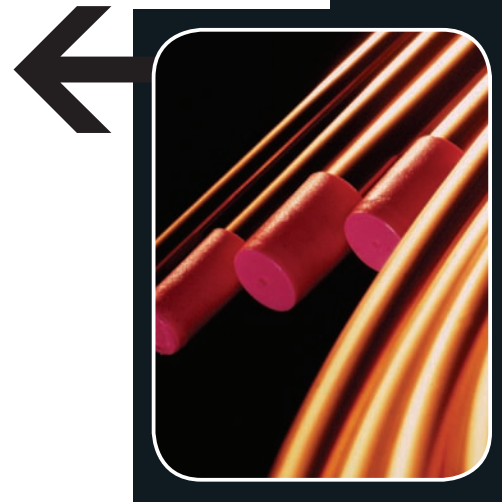
Capping

The R410A rated copper tube is distinguished by rose 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. The Medical gas copper tube has specific internal cleanliness requirements 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.

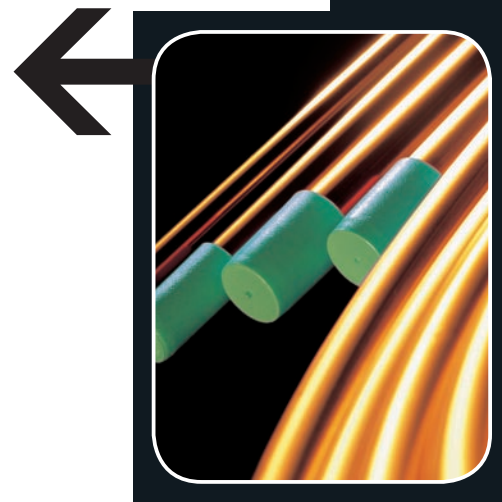
Capping

The medical gas copper tube is distinguished by green 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	¼"x21	0.126	6m straight	H	10635	10012	9553	9221	8982
50102978	6.35	0.91	¼"x20	0.139	6m straight	H	12142	11431	10907	10528	10256
50125945	9.53	0.81	⅜"x21	0.198	6m straight	H	6792	6395	6101	5889	5737
50103017	9.53	0.91	⅜"x20	0.220	6m straight	H	7710	7258	6925	6685	6512
50125987	12.70	0.81	½"x21	0.270	6m straight	½H	4994	4701	4486	4330	4218
50103069	12.70	0.91	½"x20	0.301	6m straight	½H	5653	5322	5078	4901	4774
50103079	12.70	1.02	½"x19	0.335	6m straight	½H	6389	6015	5739	5540	5396
50103131	15.88	0.91	⅝"x20	0.383	6m straight	½H	4459	4198	4006	3866	3766
50103132	15.88	1.02	⅝"x19	0.426	6m straight	½H	5031	4737	4519	4362	4249
50103163	19.05	0.91	¾"x20	0.464	6m straight	½H	3684	3468	3309	3194	3111
50103170	19.05	1.02	¾"x19	0.517	6m straight	½H	4152	3909	3729	3600	3507
50103172	19.05	1.22	¾"x18	0.611	6m straight	½H	5015	4722	4505	4349	4236
50103200	22.23	0.91	⅞"x20	0.545	6m straight	½H	3137	2953	2818	2720	2649
50103210	22.23	1.22	⅞"x18	0.720	6m straight	½H	4261	4011	3827	3694	3599
50103216	22.23	1.63	⅞"x16	0.943	6m straight	H	5794	5455	5204	5024	4894
50103221	25.40	0.91	1"x20	0.626	6m straight	H	2732	2572	2454	2369	2308
50103228	25.40	1.22	1"x18	0.829	6m straight	H	3705	3488	3328	3212	3129
50103232	25.40	1.63	1"x16	1.088	6m straight	H	5026	4732	4515	4358	4245
50103254	28.57	0.91	1½"x20	0.707	6m straight	H	2420	2278	2174	2098	2044
50103258	28.57	1.22	1½"x18	0.937	6m straight	H	3277	3086	2944	2842	2768
50103263	28.57	1.83	1½"x15	1.374	6m straight	H	5016	4723	4506	4350	4237
50103264	31.75	0.91	1½"x20	0.788	6m straight	H	2171	2044	1950	1883	1834
50103270	31.75	1.22	1½"x18	1.046	6m straight	H	2937	2765	2639	2547	2481
50103272	31.75	2.03	1½"x14	1.694	6m straight	H	5007	4714	4497	4341	4229
50103275	34.92	0.91	1¾"x20	0.869	6m straight	H	1969	1854	1769	1708	1663
50103277	34.92	1.22	1¾"x18	1.155	6m straight	H	2662	2506	2391	2308	2248
#50103284	34.92	2.03	1¾"x14	1.875	6m straight	H	4527	4262	4067	3925	3824
50103289	38.10	0.91	1½"x20	0.951	6m straight	H	1801	1696	1618	1562	1522
50103292	38.10	1.22	1½"x18	1.264	6m straight	H	2433	2291	2186	2110	2055
50103298	41.27	0.91	1¾"x20	1.032	6m straight	H	1660	1563	1491	1440	1402
50103302	41.27	1.22	1¾"x18	1.372	6m straight	H	2241	2110	2013	1943	1893
#50103310	41.27	2.41	1¾"x12.5	2.630	6m straight	H	4549	4282	4086	3944	3842
*	44.45	0.91	1¾"x20	1.113	6m straight	H	1539	1449	1383	1335	1300
*	44.45	1.22	1¾"x18	1.481	6m straight	H	2077	1955	1866	1801	1754
*	50.80	0.91	2"x20	1.275	6m straight	H	1344	1265	1207	1165	1135
50103320	50.80	1.22	2"x18	1.699	6m straight	H	1812	1705	1627	1571	1530
*	50.80	1.63	2"x16	2.251	6m straight	H	2438	2296	2190	2114	2060
50103326	53.97	0.91	2½"x20	1.356	6m straight	H	1264	1190	1135	1096	1067
50103327	53.97	1.22	2½"x18	1.807	6m straight	H	1703	1603	1530	1477	1438
50103329	53.97	1.63	2½"x16	2.396	6m straight	H	2291	2157	2058	1987	1935
50103350	66.68	1.22	2¾"x18	2.243	6m straight	H	1373	1293	1233	1190	1160
*	66.68	1.63	2¾"x16	2.978	6m straight	H	1845	1737	1657	1599	1558
*	76.20	1.63	3"x16	3.414	6m straight	H	1610	1515	1446	1396	1360
*	101.60	1.63	4"x16	4.577	6m straight	H	1201	1131	1079	1042	1015

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"x24	0.066	30m Coil	0	9711	9142	8723	8420	8202
*	4.76	0.71	3/16"x22	0.081	30m Coil	0	12715	11971	11422	11025	10739
50102950	4.76	0.91	3/16"x20	0.098	30m Coil	0	17041	16043	15308	14776	14393
*	6.35	0.56	1/4"x24	0.091	30m Coil	0	7069	6656	6350	6130	5971
*	6.35	0.71	1/4"x22	0.112	30m Coil	0	9175	8638	8242	7955	7749
50126050	6.35	0.81	1/4"x21	0.126	30m Coil	0	10635	10012	9553	9221	8982
50102977	6.35	0.91	1/4"x20	0.139	30m Coil	0	12142	11431	10907	10528	10256
*	6.35	1.22	1/4"x18	0.176	30m Coil	0	17143	16140	15400	14864	14480
*	7.94	0.56	5/16"x24	0.116	30m Coil	0	5558	5232	4993	4819	4694
*	7.94	0.71	5/16"x22	0.144	30m Coil	0	7177	6757	6447	6223	6062
50126052	7.94	0.81	5/16"x21	0.162	30m Coil	0	8290	7805	7447	7188	7002
50102987	7.94	0.91	5/16"x20	0.180	30m Coil	0	9431	8879	8472	8177	7966
*	9.53	0.56	3/8"x24	0.141	18m Coil	0	4579	4311	4113	3970	3867
*	9.53	0.71	3/8"x22	0.176	18m Coil	0	5893	5548	5294	5110	4978
50125936	9.53	0.81	3/8"x21	0.198	18m Coil	0	6792	6395	6101	5889	5737
50103015	9.53	0.91	3/8"x20	0.220	18m Coil	0	7710	7258	6925	6685	6512
*	12.70	0.56	1/2"x24	0.191	18m Coil	0	3389	3190	3044	2938	2862
*	12.70	0.71	1/2"x22	0.239	18m Coil	0	4344	4090	3903	3767	3669
50125935	12.70	0.81	1/2"x21	0.270	18m Coil	0	4994	4701	4486	4330	4218
50103066	12.70	0.91	1/2"x20	0.301	18m Coil	0	5653	5322	5078	4901	4774
*	15.88	0.56	5/8"x24	0.241	18m Coil	0	2688	2530	2414	2331	2270
*	15.88	0.71	5/8"x22	0.303	18m Coil	0	3438	3237	3088	2981	2904
*	15.88	0.81	5/8"x21	0.343	18m Coil	0	3945	3715	3544	3421	3332
50103130	15.88	0.91	5/8"x20	0.383	18m Coil	0	4459	4198	4006	3866	3766
50103134	15.88	1.02	5/8"x19	0.426	18m Coil	0	5031	4737	4519	4362	4249
*	19.05	0.71	3/4"x22	0.366	18m Coil	0	2846	2679	2557	2468	2404
50103159	19.05	0.91	3/4"x20	0.464	18m Coil	0	3684	3468	3309	3194	3111
50103173	19.05	1.22	3/4"x18	0.611	18m Coil	0	5015	4722	4505	4349	4236
50103198	22.23	0.91	7/8"x20	0.545	18m Coil	0	3137	2953	2818	2720	2649

* 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

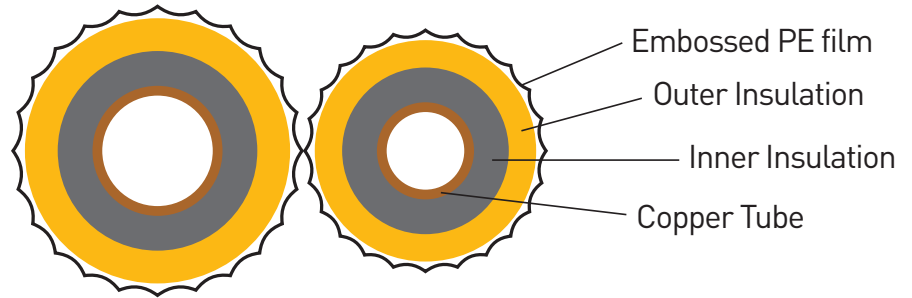
Crane Copper Tube also offer a range of American sized copper tube for use in air-conditioning, refrigeration, R410A and medical gas applications.

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



Pair Coil

Crane Copper tube Pair Coil is a superior pre-insulated copper tube ideal for rapid cost effective split air-conditioning installation. Pair coil uses soft annealed copper tube. The tube is flexible and easily bent for quick and easy installation.



Pair Coil Specifications

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
50103431	6.35	0.81	¼"x21	0.126	20m Coil	0	10635	10012	9553	9221	8982
	9.52	0.81	¾"x21	0.198		0	6800	6402	6108	5896	5743
50103432	6.35	0.81	¼"x21	0.126	20m Coil	0	10635	10012	9553	9221	8982
	12.7	0.81	½"x21	0.270		0	4994	4701	4486	4330	4218
50103433	6.35	0.81	¼"x21	0.126	20m Coil	0	10635	10012	9553	9221	8982
	15.88	1.02	⅝"x19	0.426		0	5031	4737	4519	4362	4249
50103434	9.52	0.81	¾"x21	0.198	20m Coil	0	6800	6402	6108	5896	5743
	15.88	1.02	⅝"x19	0.426		0	5031	4737	4519	4362	4249
50103435	9.52	0.81	¾"x21	0.198	20m Coil	0	6800	6402	6108	5896	5743
	19.05	1.22	¾"x18	0.611		0	5015	4722	4505	4349	4236
50103436	12.7	0.81	½"x21	0.270	20m Coil	0	4994	4701	4486	4330	4218
	19.05	1.22	¾"x18	0.611		0	5015	4722	4505	4349	4236

■ Denotes R410A rated tube

- **Manufactured to AS/NZS1571**
- **R410A compliant**
- **Ideal for split system air-conditioners**
- **Saves time on installations**
- **Easier and neater installations**
- **Bends easily without kinking using Crane Copper Tube Pair Coil Benders**

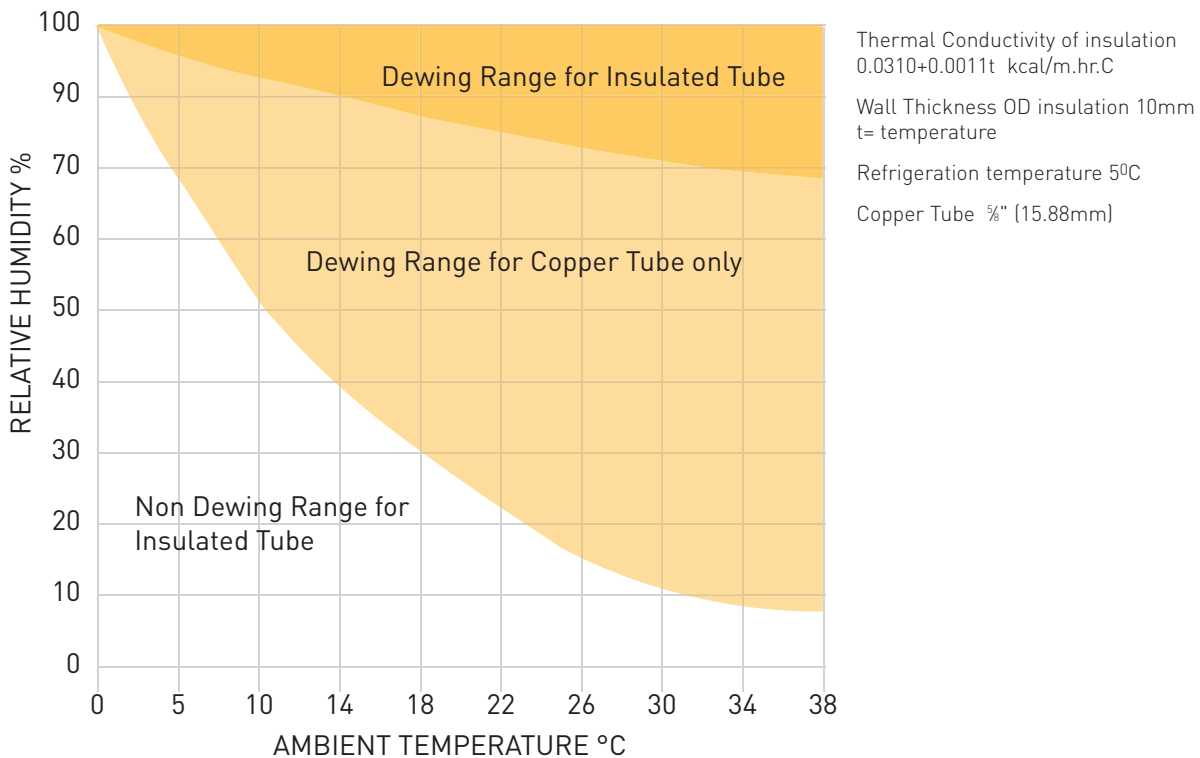
Insulation Properties

Crane Item Number	OD x wall thickness	Insulation Tube (mm)		Thermal Conductivity	Surface Heat Transfer Coefficient	Tensile Strength (Max)	Water Absorption	Shrinkage (120+5°C)
		Outer Diameter	Wall Thickness	Kcal/mhrC	Kcal/m2hrC			
50103431	6.35 x 0.8	24	8	0.031+0.00011t	7	24.5 (N/cm ²) 2.5 (kgf/cm ²)	0.01 Max g/100cm ²	7% Max
	9.52 x 0.8	27	8					
50103432	6.35 x 0.8	24	8					
	12.70 x 0.8	34	8					
50103433	6.35 x 0.8	24	8					
	15.88 x 1.0	37	10					
50103434	9.52 x 0.8	27	8					
	15.88 x 1.0	37	10					
50103435	9.52 x 0.8	27	8					
	19.05 x 1.22	41	10					
50103436	12.70 x 0.8	34	10					
	19.05 x 1.22	41	10					

Crane Copper Tube's insulation is heat resistant to 120°C

The Insulation is a unique double layered structure made of cross linked, foam (30 times) polyethylene with closed cells. The insulation tube is extruded to ensure close tube contact to enhance dew point proofing properties. The insulation is covered with embossed polyethylene film to prevent foam creasing. The polyethylene film contains UV protection additives built for the harsh Australian conditions.

Dew Point



Pair Coil is a product imported by Crane Copper Tube for sale in Australia and international markets.

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	45.0	50.0	55.0	60.0	65.0	70.0
	°F	113.0	122.0	131.0	140.0	149.0	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.

Crane Copper Tube

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