



# Copper Tube



AIR CONDITIONING  
& REFRIGERATION  
COPPER TUBE  
**AS/NZS 1571**  
**ASTM B280**  
**BSEN 12735**

[www.kembla.com.au](http://www.kembla.com.au)



# Copper Tube

MM Kembla has been providing our customers with the highest quality and most reliable products and services for over 100 years. Established in 1916, MM Kembla is Australia's only copper tube manufacturer. Still operating from its original site at Port Kembla, NSW Australia, MM Kembla remains the most highly regarded supplier of copper products including tube, fittings and accessories. Extensive technical knowledge combined with stringent in-house quality controls and testing with an ISO 9001 certified quality management system, MM Kembla has developed a renowned reputation for quality, reliability and service.



## AIR CONDITIONING & REFRIGERATION TUBE

KEMBLA® copper tube is manufactured to a variety of international standards, including Australian, New Zealand, British/European and American, and is suitable for different applications such as plumbing, air conditioning, refrigeration, medical gas, and general engineering applications.

Included in the KEMBLA® ranges are the three International Standards for air conditioning and refrigeration grade tubes, which have different internal cleanliness specifications:

- **Australian/New Zealand Standard AS/NZS 1571**  
(max. total residue shall not exceed 0.038g/m<sup>2</sup>)
- **American Standard ASTM B280**  
(max. total residue shall not exceed 0.038g/m<sup>2</sup>)
- **European Standard EN 12735-1**  
(max. total carbon residue shall not exceed 0.038g/m<sup>2</sup>)

All KEMBLA® tubes are guaranteed to comply with each of these relevant Standards and Test Certificates are provided for all products upon request. After cleaning, all tubes are individually end-capped to maintain their internal cleanliness. All straight tubes are manufactured in 5.8m lengths for ease of containerisation and are bundled and wrapped in plastic for maximum protection. Individual coils are also wrapped in plastic, packed into cardboard cartons and palletized for delivery.

Included in some ranges are products suitable for high-pressure refrigerants such as R410A and R32, which are ozone friendly refrigerants. These tubes are identified and protected with pink caps to designate they are "high pressure refrigerant tubes". R410A for example has a 60% higher operating pressure than

R22 and requires a thicker wall tube and significantly stronger copper fittings. 15% silver solder is recommended when brazing tube for use with R410A or other high pressure refrigerants.

Tubes are available from 6.35mm (1/4") to 104.78mm (4-1/8") diameter in various wall thicknesses depending on the Standard, as shown in the following tables.

## REFRIGERATION FITTINGS TO AMERICAN STANDARD ASME B16.22

KEMBLA® fittings are marketed under the famous KEMBLA® and K Tick brand marks. The ASME B16.22 range of fittings is available to suit all KEMBLA® air conditioning and refrigeration grade tubes, and are stocked in various Kembla warehouse locations throughout Australia, New Zealand and South East Asia.

Each fitting is permanently marked with the KEMBLA® or K Tick brand mark and are individually cleaned, bagged and labeled to fully comply with the cleanliness requirements of AS/NZS 1571, ASTM B280 and EN 12735-1. Refer to the KEMBLA 'Refrigeration Fittings Range' brochure on our web site.



## KEMBLA® COPPER TUBE TO AUSTRALIAN/NEW ZEALAND STANDARD AS/NZS 1571

ACTUAL TUBE SIZE			WEIGHT (kg/m)	SAFE WORKING PRESSURE (kPa)#		STRAIGHT LENGTH (5.8m)	STRAIGHT LENGTH (6.0m)	LENGTHS/ BUNDLE	PRODUCT DETAILS			
OUTSIDE DIAMETER (mm)	WALL THICKNESS (inches)	50°C		70°C	ANNEALED COILS				COIL LENGTH (m)	COILS/ CARTON	COILS PALLET	
4.76	0.71	3/16" x 22swg	0.081	12,715	10,854				T32263	30	5	135
6.35	0.56	1/4" x 24swg	0.091	7,069	6,035				T32458	15	13	468
6.35	0.61	1/4" x 23swg	0.098	7,760	6,625				T95105	15	13	468
6.35	0.71	1/4" x 22swg	0.113	9,175	7,832				T32780	15	13	468
6.35	0.81	1/4" x 21swg	0.126	10,635	9,078	T51430	T51435	100	T74634	30	5	160
6.35	0.91	1/4" x 20swg	0.139	12,142	10,365	T92028	T92029	100	T32336	30	5	160
7.94	0.91	5/16" x 20swg	0.180	9,431	8,051				T32522	30	5	160
9.52	0.61	3/8" x 23swg	0.153	5,018	4,284				T95120	15	8	320
9.52	0.71	3/8" x 22swg	0.176	5,900	5,037	T92195		100	T55746	15	8	320
9.52	0.81	3/8" x 21swg	0.198	6,800	5,805	T77111	T77112	100	T55743	18	6	240
9.52	0.91	3/8" x 20swg	0.220	7,718	6,589	T56849	T56847	100	T32662	18	6	240
12.70	0.61	1/2" x 23swg	0.207	3,705	3,163				T95130	15	8	224
12.70	0.71	1/2" x 22swg	0.239	4,344	3,709	T16063 *		100	T54139	15	8	224
12.70	0.81	1/2" x 21swg	0.271	4,994	4,263	T10286 *	T10287 *	100	T54133	18	4	184
12.70	0.91	1/2" x 20swg	0.301	5,653	4,825	T22528 *	T22527 *	100	T32930	18	4	184
12.70	1.02	1/2" x 19swg	0.335	6,389	5,454		T57380 *	100				
15.88	0.61	5/8" x 23swg	0.262	2,936	2,507				T95140	15	5	200
15.88	0.71	5/8" x 22swg	0.303	3,438	2,935				T95145	15	5	200
15.88	0.81	5/8" x 21swg	0.343	3,945	3,368				T52076	15	5	200
15.88	0.91	5/8" x 20swg	0.383	4,459	3,807	T24938 *	T24937 *	100	T33090	18	3	132
15.88	1.02	5/8" x 19swg	0.426	5,031	4,295	T16871 *	T16870 *	100	T16850	18	3	132
19.05	0.71	3/4" x 22swg	0.366	2,846	2,430				T95155	15	4	128
19.05	0.91	3/4" x 20swg	0.464	3,684	3,145	T88073 *	T88072 *	100	T33294	18	3	108
19.05	1.02	3/4" x 19swg	0.517	4,152	3,544		T24813 *	100				
19.05	1.14	3/4" x 0.045"	0.574	4,668	3,985	T16856*	T16855 *	100	T16857	18	2	72
19.05	1.22	3/4" x 18swg	0.611	5,015	4,281				T33243	15	4	128
22.22	0.91	7/8" x 20swg	0.545	3,138	2,679	T13864 *	T13862 *	100	T76198	18	3	132
22.22	1.14	7/8" x 0.045"	0.675	3,970	3,389	T21091 *		100				
22.22	1.22	7/8" x 18swg	0.720	4,263	3,639		T64173 *	100				
22.22	1.40	7/8" x 0.055"	0.819	4,929	4,208	T16861 *	T16860 *	100				
22.22	1.63	7/8" x 16swg	0.943	5,796	4,948		T23515	100				
25.40	0.91	1" x 20swg	0.626	2,732	2,332	T60659	T60658	50				
25.40	1.22	1" x 18swg	0.829	3,705	3,163	T91955	T91952	50				
25.40	1.63	1" x 16swg	1.089	5,026	4,291	T79846	T79850	50				
28.58	0.91	1 1/8" x 20swg	0.708	2,419	2,065	T73973	T73971	50				
28.58	1.22	1 1/8" x 18swg	0.938	3,276	2,797	T91963	T91961	50				
28.58	1.63	1 1/8" x 16swg	1.234	4,437	3,787		T14559	50				
28.58	1.83	1 1/8" x 15swg	1.376	5,014	4,281	T14570		50				
31.75	0.91	1 1/4" x 20swg	0.789	2,171	1,853	T22040	T22039	50				
31.75	1.22	1 1/4" x 18swg	1.047	2,937	2,508	T91979	T21820	50				
31.75	2.03	1 1/4" x 14swg	1.695	5,007	4,274			50				
34.92	0.91	1 3/8" x 20swg	0.870	1,969	1,681	T15239	T15237	50				
34.92	1.22	1 3/8" x 18swg	1.155	2,662	2,272	T91989	T91987	50				
34.92	1.40	1 3/8" x 0.055"	1.319	3,070	2,620	T81876		50				
34.92	1.63	1 3/8" x 16swg	1.525	3,596	3,070	T75974		50				
34.92	2.03	1 3/8" x 14swg	1.876	4,527	3,865	T75981	T75980	50				
38.10	1.22	1 1/2" x 18swg	1.264	2,433	2,077	T91996	T91995	50				
41.28	0.91	1 5/8" x 20swg	1.032	1,660	1,417	T32923	T32921	50				
41.28	1.22	1 5/8" x 18swg	1.373	2,241	1,913	T91793	T91791	25				
41.28	1.63	1 5/8" x 16swg	1.816	3,021	2,579		T83062	25				
41.28	2.41	1 5/8" x 15swg	2.632	4,548	3,882	T16866	T16865	25				
50.80	1.22	2" x 18swg	1.700	1,812	1,546		T94943	25				
53.98	0.91	2 1/8" x 20swg	1.357	1,263	1,078	T78167	T78166	25				
53.98	1.22	2 1/8" x 18swg	1.809	1,703	1,453	T94961	T94960	25				
53.98	1.63	2 1/8" x 16swg	2.398	2,291	1,956	T94950	T94951	25				
53.98	1.78	2 5/8" x 16swg	2.611	2,508	2,141	T76032		25				
53.98	2.64	2 5/8" x 12swg	3.809	3,776	3,223	T61585		25				
63.50	1.22	2 1/2" x 18swg	2.135	1,443	1,232		T89945	25				
66.68	1.22	2 5/8" x 18swg	2.244	1,373	1,172	T31978	T31976	25				
66.68	1.63	2 5/8" x 16swg	2.979	1,845	1,575	T75568	T75566	25				
66.68	2.03	2 5/8" x 14swg	3.688	2,310	1,972	T68985	T68980	25				
76.20	1.63	3" x 16swg	3.416	1,610	1,374		T88013	25				
79.38	2.29	3 1/8" x 0.090"	4.961	2,186	1,866	T20811		20				
101.60	1.63	4" x 16swg	4.579	1,201	1,026	T20924	T20923	10				
104.78	2.79	4 1/8" x 0.110"	7.996	2,013	1,719	T31309		10				

Suitable for R410A and some other high pressure refrigerants

\* Straight lengths supplied in half hard temper, otherwise hard drawn # Safe Working Pressures are based on annealed temper

## KEMBLA® COPPER TUBE TO EUROPEAN STANDARD EN 12735-1

OUTSIDE DIAMETER (mm)	ACTUAL TUBE SIZE		WEIGHT (kg/m)	SAFE WORKING PRESSURE (kPa)#		STRAIGHT LENGTH (5.8m)	LENGTHS/ BUNDLE	PRODUCT DETAILS ANNEALED COILS	COIL LENGTH (m)	COILS/ CARTON	COILS PALLET
	WALL THICKNESS (inches)	x		50°C	70°C						
6.35	0.56	1/4" x 24swg	0.091	7,070	6,030			T32450	15	13	468
6.35	0.71	1/4" x 22swg	0.113	9,170	7,830	T55967	100	T32435	30	5	160
6.35	0.81	1/4" x 21swg	0.126	10,630	9,080	T51425	100	T74630	15	13	468
9.52	0.56	3/8" x 24swg	0.141	4,580	3,910			T55255	15	8	320
9.52	0.61	3/8" x 23swg	0.153	5,020	4,280			T86746	15	8	320
9.52	0.71	3/8" x 22swg	0.176	5,900	5,040	T92193	100	T32785	30	5	160
9.52	0.81	3/8" x 21swg	0.198	6,800	5,800	T77113	100	T55746	15	8	320
12.70	0.56	1/2" x 24swg	0.191	3,390	2,890			T74626	15	6	240
12.70	0.61	1/2" x 23swg	0.207	3,700	3,160			T87420	15	6	240
12.70	0.71	1/2" x 22swg	0.239	4,340	3,710	T16062*	100	T33020	30	3	120
12.70	0.81	1/2" x 21swg	0.271	4,990	4,260	T10285*	100	T54140	15	6	192
15.88	0.61	5/8" x 23swg	0.262	2,940	2,510			T91229	15	5	200
15.88	0.81	5/8" x 21swg	0.343	3,950	3,370			T52081	15	5	200
15.88	0.91	5/8" x 20swg	0.383	4,460	3,810	T24939*	100				
15.88	1.02	5/8" x 19swg	0.426	4,870	4,160	T16875*	100	T16853	15	5	200
19.05	0.71	3/4" x 22swg	0.366	2,850	2,430			T33319	15	4	128
19.05	0.91	3/4" x 20swg	0.464	3,680	3,140	T88074*	100				
19.05	1.14	3/4" x 0.045"	0.574	4,400	3,760	T16854*	100	T16862	15	4	128
22.22	0.91	7/8" x 20swg	0.545	3,140	2,680	T13865*	100				
22.22	1.40	7/8" x 0.055"	0.819	4,640	3,960	T16863*	100				
25.40	1.63	1" x 16swg	1.089	4,730	4,040	T79851					
28.58	0.91	1 1/8" x 20swg	0.708	2,420	2,070	T73974*	50				
28.58	1.22	1 1/8" x 18swg	0.938	3,090	2,640	T14578	50				
28.58	1.83	1 1/8" x 15swg	1.376	4,720	4,030	T14572	50				
34.92	1.22	1 3/8" x 18swg	1.155	2,510	2,140	T91990	50				
34.92	2.03	1 3/8" x 14swg	1.876	4,260	3,640	T75983	50				
41.28	1.22	1 5/8" x 18swg	1.373	2,110	1,800	T91794	25				
41.28	2.41	1 5/8" x 15swg	2.632	4,280	3,660	T16867	25				
53.98	1.22	2 1/8" x 18swg	1.809	1,610	1,370	T94963	25				
53.98	2.93	2 1/8" x 11swg	4.2104	3,970	3,420	T94964	25				
66.68	1.63	2 5/8" x 16swg	2.979	1,740	1,490	T75569	25				
79.38	2.29	3 1/8" x 0.090"	4.961	2,060	1,760	T20812	20				

■ Suitable for R410A and some other high pressure refrigerants

\* Straight lengths supplied in half hard temper, otherwise hard drawn

# Safe Working Pressures are based on annealed temper



PairCoil



PairCoil MAX

### KEMBLA® PAIRCOIL TO AS/NZS 1571

MM Kembla supplies Insulated Pair Coils in both a standard white cross linked polyethylene and a fire resistant black nitrile rubber version for high humidity regions. Pair Coils have the benefits of fast and easy installation without the need for gluing and taping of short lengths.

All of the Kembla® copper meets the requirements of R410A and some other high pressure refrigerants and are manufactured to AS/NZS 1571. Refer to the separate brochures on our website for more details.

# Copper Tube TO ASTM B280

## KEMBLA® COPPER TUBE TO AMERICAN STANDARD ASTM B280

PRODUCT CODE	STANDARD SIZE (inch)	ACTUAL (inch)		ACTUAL (mm)		WEIGHT (kg/length)	SAFE WORKING PRESSURE (kPa)#		LENGTHS/ BUNDLE
		O.D.	W.T.	O.D.	W.T.		50°C	70°C	
T51420	1/4"	1/4"	0.030	6.35	0.76	0.69	9,900	8,450	100
T21688	3/8"	3/8"	0.030	9.52	0.76	1.09	6,350	5,420	100
T21173	1/2"	1/2"	0.035	12.70	0.89	1.71	5,520	4,710	100
T15123	5/8"	5/8"	0.040	15.88	1.02	2.47	5,030	4,290	100
T24453	3/4"	3/4"	0.042	19.05	1.07	3.14	4,370	3,730	100
T62952	7/8"	7/8"	0.045	22.22	1.14	3.92	3,970	3,390	100
T82010	1-1/8"	1-1/8"	0.050	28.58	1.27	5.65	3,420	2,920	50
T13546	1-3/8"	1-3/8"	0.055	34.92	1.40	7.65	3,070	2,620	50
T25513	1-5/8"	1-5/8"	0.060	41.28	1.52	9.85	2,810	2,400	25
T76024	2-1/8"	2-1/8"	0.070	53.98	1.78	15.14	2,510	2,140	25
T81260	2-5/8"	2-5/8"	0.080	66.68	2.03	21.39	2,310	1,970	25
T22196	3-1/8"	3-1/8"	0.090	79.38	2.29	28.77	2,190	1,870	20
T71115	4-1/8"	4-1/8"	0.110	104.78	2.79	46.38	2,010	1,720	10

## KEMBLA® ANNEALED COILS TO AMERICAN STANDARD ASTM B280

PRODUCT CODE	STANDARD SIZE (inch)	ACTUAL (inch)		ACTUAL (mm)		WEIGHT (kg/Coil)	SAFE WORKING PRESSURE (kPa)#		COILS/ CARTON	COILS/ PALLET
		O.D.	W.T.	O.D.	W.T.		50°C	70°C		
T59420	1/4"	1/4"	0.030	6.35	0.76	1.79	9,830	8,400	13	468
T58122	5/16"	5/16"	0.032	7.94	0.81	2.43	8,300	7,090	5	160
T32773	3/8"	3/8"	0.032	9.52	0.81	2.97	6,810	5,810	8	320
T33016	1/2"	1/2"	0.032	12.70	0.81	4.06	5,000	4,270	6	240
T33121	5/8"	5/8"	0.035	15.88	0.89	5.62	4,240	3,620	5	200
T33300	3/4"	3/4"	0.035	19.05	0.89	6.81	3,500	2,990	4	128
T21100	7/8"	7/8"	0.045	22.22	1.14	10.13	3,990	3,400	3	132

# Safe Working Pressures are based on annealed temper

## REFRIGERANT PRESSURE-TEMPERATURE CHART

The following table is a comparison of operating pressures for the most common refrigerants and can be used for determining which copper tube size is required. This is a guide only and the refrigerant manufacturer should be consulted for more specific information.

Refrigerant	Saturated Vapour Pressures (kPa)						
	-40°C	-20°C	0°C	20°C	40°C	60°C	70°C
R22	5	145	397	810	1,433	2,326	2,884
R32	76	304	712	1,374	2,377	3,831	4,776
R134a	-47	39	192	469	915	1,581	2,016
R404A	26	195	498	989	1,729	2,789	
R407C	19	179	467	936	1,648	2,668	3,318
R410A	76	303	704	1,353	2,336	3,749	4,631
R438A	12	162	432	873	1,539	2,495	3,104
R507	40	216	525	1,024	1,778	2,859	3,554
R744 (CO2)	904	1,869	3,384	5,625	7,106 (@30°C)		



## TECHNICAL SUPPORT

MM Kembla is renowned as one of the world's leading experts for technical support regarding copper tube and fittings. We invite hydraulic consultants, engineers, distributors and installation contractors to visit our website where we provide a comprehensive range of technical information.



## INTERNATIONAL CERTIFICATION

MM Kembla manufacturing processes and quality systems are built upon 100 years of experience in manufacturing copper tube. An intensive ISO9001 certified quality control system is applied to all MM Kembla products. MM Kembla also has a variety of third party accreditations to Australian, New Zealand, British/ European and American standards.



MM Kembla's Australian manufacturing facilities at Port Kembla.

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