

Plumbing Copper Tube Data Sheet



Lawton Plumbing Tube	Straight Length or Coil
Applications	Potable Water, Heating and Cooling Systems
Market Segment	Domestic and Commercial
Outside Diameter	6 mm - 219 mm
Wall Thickness	0.6 mm - 3 mm
Material Condition	R220, R250 ¹ , R290 ¹
Material	CW024A Copper
Product Marking	Permanent and Inkjet Durable Markings to EN 1057
Standard	EN 1057
Straight Lengths Form of Supply	Bundles
Coils Form of Supply	Boxed Pancake or Spool
Inner Surface Quality	Clean and Smooth Carbon Content to BS EN 1057 Tested per BS EN 723
Warranty	75 Years (See webpage for T&Cs)

1) Straight lengths only

Material Mechanical Properties

Material Designation	Tensile strength min. (N/mm ² MPa)	Elongation min. (%)	Hardness (Indicative) HV5 VPN
R220 (soft, annealed)	220	40	40 - 70
R250 (half-hard)	250	30 20 for 15 x 1.0, 22 x 1.2 and 28 x 1.2	75 - 100
R290 (hard)	290	3	> 100

Material Composition and Other Properties

Copper Content Including Silver	≥ 99.90 %
Phosphorus	0.015 - 0.040 %
Total Impurities Excluding Phosphorus and Silver	< 0.060 %
Melting Point	1083°C
Density	8.96 g/cm ³

Carbon Content

Inner surface lubricant residue defined as carbon content to BS EN 1057 Tested per BS EN 723

Outside Diameter		Material Condition	Value (mg/dm ²)
Over	Up To and Including		
6 ^a	54	R220, R250, R290	0.2
54	219	R250	0.2
54	219	R290	1.0

^a Including 6

Copper Tube Expansion

Copper has a Coefficient of Linear Expansion of $17 \times 10^{-6} / ^\circ\text{C}$

Temperature Change	3m	4m	5m	6m	7m	8m	9m	10m	12m	25m
10°	0.5mm	0.7mm	0.9mm	1.0mm	1.2mm	1.4mm	1.5mm	1.7mm	2.0mm	4.3mm
20°	1.0mm	1.4mm	1.7mm	2.0mm	2.4mm	2.7mm	3.0mm	3.4mm	4.0mm	8.5mm
30°	1.5mm	2.0mm	2.6mm	3.1mm	3.6mm	4.1mm	4.6mm	5.1mm	6.1mm	13.0mm
40°	2.0mm	2.7mm	3.4mm	4.1mm	4.8mm	5.4mm	6.1mm	6.8mm	8.2mm	17.0mm
50°	2.6mm	3.4mm	4.3mm	5.1mm	6.0mm	6.8mm	7.7mm	8.5mm	10.2mm	21.0mm
60°	3.1mm	4.1mm	5.1mm	6.1mm	7.1mm	8.2mm	9.2mm	10.2mm	12.2mm	26.0mm
70°	3.6mm	4.8mm	6.0mm	7.1mm	8.3mm	9.5mm	10.7mm	11.9mm	14.3mm	30.0mm
80°	4.1mm	5.4mm	6.8mm	8.2mm	9.5mm	10.9mm	12.2mm	13.6mm	16.3mm	34.0mm
90°	4.6mm	6.1mm	7.7mm	9.2mm	10.7mm	12.2mm	13.8mm	15.3mm	18.4mm	38.0mm
100°	5.1mm	6.8mm	8.5mm	10.2mm	11.9mm	13.6mm	15.3mm	17.0mm	20.4mm	43.0mm
150°	7.7mm	10.2mm	12.8mm	15.3mm	17.9mm	20.4mm	23.0mm	25.5mm	30.6mm	64.0mm
200°	10.2mm	13.6mm	17.0mm	20.4mm	23.8mm	27.2mm	30.6mm	34.0mm	40.8mm	85.0mm

Plumbing Straight Lengths EN 1057

Maximum Operating Pressure (MOP) to BS 1306.

O.D. (mm)	Wall (mm)	Material Condition	MOP up to 65°C (bar)	Thickness Tolerance	Outside Diameter Tolerance	
					Mean	Any inc. Ovality
6	0.6 (TX)	R250	133.3	± 10%	± 0.04mm	± 0.09mm
6	0.8 (TY)	R250	184.6	± 10%	± 0.04mm	± 0.09mm
8	0.6 (TX)	R250	97.3	± 10%	± 0.04mm	± 0.09mm
8	0.8 (TY)	R250	133.3	± 10%	± 0.04mm	± 0.09mm
10	0.6 (TX)	R250	76.6	± 10%	± 0.04mm	± 0.09mm
10	0.8 (TY)	R250	104.3	± 10%	± 0.04mm	± 0.09mm
12	0.6 (TX)	R250	63.2	± 10%	± 0.04mm	± 0.09mm
12	0.8 (TY)	R250	85.7	± 10%	± 0.04mm	± 0.09mm
15	0.7 (TX)	R250	58.7	± 10%	± 0.04mm	± 0.09mm
15	1.0 (TY)	R250	85.7	± 13%	± 0.04mm	± 0.09mm
22	0.9 (TX)	R250	51.2	± 10%	± 0.05mm	± 0.10mm
22	1.2 (TY)	R250	69.2	± 15%	± 0.05mm	± 0.10mm
28	0.9 (TX)	R250	39.9	± 10%	± 0.05mm	± 0.10mm
28	1.2 (TY)	R250	53.7	± 15%	± 0.05mm	± 0.10mm
35	1.0	R290	42.9	± 15%	± 0.06mm	± 0.07mm
35	1.2 (TX)	R250	42.6	± 10%	± 0.06mm	± 0.11mm
35	1.5 (TY)	R290	65.4	± 15%	± 0.06mm	± 0.07mm
42	1.0	R290	35.6	± 15%	± 0.06mm	± 0.07mm
42	1.2 (TX)	R250	35.3	± 10%	± 0.06mm	± 0.11mm
42	1.5 (TY)	R290	54.1	± 15%	± 0.06mm	± 0.07mm
54	1.0	R290	27.5	± 15%	± 0.06mm	± 0.07mm
54	1.2 (TX)	R250	27.3	± 10%	± 0.06mm	± 0.11mm
54	2.0 (TY)	R290	56.2	± 15%	± 0.06mm	± 0.07mm
66.7	1.2 (TX)	R290	26.7	± 15%	± 0.07mm	± 0.10mm
66.7	2.0 (TY)	R290	45.1	± 15%	± 0.07mm	± 0.10mm
76.1	1.5 (TX)	R290	29.4	± 15%	± 0.07mm	± 0.10mm
76.1	2.0 (TY)	R290	39.4	± 15%	± 0.07mm	± 0.10mm
108	1.5 (TX)	R290	20.6	± 15%	± 0.07mm	± 0.20mm
108	2.5 (TY)	R290	34.6	± 15%	± 0.07mm	± 0.20mm
133	1.5 (TX)	R290	16.7	± 15%	± 0.20mm	± 0.70mm
159	2.0 (TX)	R290	18.6	± 15%	± 0.20mm	± 0.70mm
219	3.0 (TX)	R290	20.3	± 15%	± 0.60mm	± 1.50mm

Plumbing Coils EN 1057

Maximum Operating Pressure (MOP) to BS 1306.

O.D. (mm)	Wall (mm)	Material Condition	Coil Lengths	Max Working Pressure bar up to 65°C (bar)	Thickness Tolerance	OD Tolerance Mean (mm)
6	0.6 (TW)	R220	25 m	102.2	± 10%	± 0.04mm
8	0.6 (TW)	R220	10 m / 25 m / 50 m	74.6	± 10%	± 0.04mm
10	0.7 (TW)	R220	10 m / 25 m / 50 m	69.2	± 10%	± 0.04mm
10	0.8 (TY)	R220	30 m	80	± 10%	± 0.04mm
15	1.0 (TY)	R220	25 m	65.7	± 13%	± 0.04mm
22	1.2 (TY)	R220	25 m	53.1	± 15%	± 0.05mm

For more details, please refer to our website or contact us by e-mail at technical@lawtontubes.co.uk