

Refrigeration Copper Tube Data Sheet



Lawton Pre-Insulated Coils	Class O (NBR) and Class B (PE) Fire Rated, Pair and Single Coils
Applications	Air Conditioning, Refrigeration Piping Systems, Heat Pumps
Market Segment	Domestic and Commercial
Outside Diameter	1/4" - 5/8" (6.35 mm - 15.87 mm)
Wall Thickness	0.028" - 0.036" (0.71 mm - 0.91 mm)
Material Condition	R220 (soft, annealed)
Material	CW024A Copper
Standard	EN 12735-1 (copper tube)
Insulation	Class O: Closed Cell NBR Foam, 9 mm and 13 mm Class B: Closed Cell PE Foam, 9 mm
Fire Classification	EN 13501-1: Class O BL-s3,d0. Class B BL-s1,d0
UV Resistance	Tested to ASTM G154 and ISO 4892-3
Coil Lengths	20 m (Class O), 25 m (Class B)
Compatible Refrigerants	R32, R134a, R410A, R404A, R407C, R407F, R1234yf, R1234ze, R744/CO2 and more
Product Marking	Markings on insulation and coil
Delivery Condition	Nitrogen Purged and Capped
Form of Supply	Boxed Coils
Inner Surface Quality	Clean and Smooth, Carbon Content $\leq 0.38 \text{ mg/dm}^2$
Installation	No glue, tape or powder; insulation profile splits for easy fitting access
Guarantee	75 Years (See website for full T&Cs)

Pair Coils Class O

Product Description	Tube Dimensions	Material Condition	Insulation Thickness	Lengths
9mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 3/8" x 0.81mm	R220	9mm (3/8")	20m
9mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 1/2" x 0.81mm	R220	9mm (3/8")	20m
9mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 5/8" x 0.91mm	R220	9mm (3/8")	20m
9mm Lawton Pair Coil Class O Fire Rated	3/8" x 0.81mm & 5/8" x 0.91mm	R220	9mm (3/8")	20m
13mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 3/8" x 0.81mm	R220	13mm (1/2")	20m
13mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 1/2" x 0.81mm	R220	13mm (1/2")	20m
13mm Lawton Pair Coil Class O Fire Rated	1/4" x 0.71mm & 5/8" x 0.91mm	R220	13mm (1/2")	20m
13mm Lawton Pair Coil Class O Fire Rated	3/8" x 0.81mm & 5/8" x 0.91mm	R220	13mm (1/2")	20m

Single Coil Class O

Product Description	Tube Dimensions	Material Condition	Insulation Thickness	Lengths
13mm Lawton Class O Fire Rated	1/4" x 0.71mm	R220	13mm (1/2")	20m

Pair Coils Class B

Product Description	Tube Dimensions	Material Condition	Insulation Thickness	Lengths
9mm Lawton Pair Coil Class B Fire Rated	1/4" x 0.71mm & 3/8" x 0.81mm	R220	9mm (3/8")	25m
9mm Lawton Pair Coil Class B Fire Rated	1/4" x 0.71mm & 1/2" x 0.81mm	R220	9mm (3/8")	25m
9mm Lawton Pair Coil Class B Fire Rated	1/4" x 0.71mm & 5/8" x 0.91mm	R220	9mm (3/8")	25m
9mm Lawton Pair Coil Class B Fire Rated	3/8" x 0.81mm & 5/8" x 0.91mm	R220	9mm (3/8")	25m

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

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

Maximum Operating Pressure Coiled Tube EN 12735-1 R220

O.D. (Inches)	Wall (Inches)	Gauge (SWG)	MOP in annealed condition up to 100°C (bar)
1/4	0.028	22	101
3/8	0.032	21	75
1/2	0.032	21	55
5/8	0.036	20	49

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

Insulation Properties

Property	Class O (NBR)	Class B (PE)
Material	Highly flexible Closed Cell NBR Foam	Closed Cell PE Foam
Colour	Black	Black
Thermal Conductivity to ASTM C518	0.036 W/mK at 20°C	0.037 W/mK at 20°C
Working Temperature	-50°C to +105°C	-50°C to +105°C
Vapour Barrier	Inherent resistance to vapor intrusion due to closed cell structure Additional vapor barrier may be necessary for low temperature systems in humid environment	
Fungal Growth	NIL	
Environmental	CFC Free, Zero ODP, Zero GWP. Corrosion resistant, dust and fibre free	

Fire Performance Class O

Characteristic	Test Method	Classification	Performance Description
Reaction to Fire	BS EN 13823	BL	Very Limited Contribution to Fire: The product offers high fire resistance and will not significantly contribute to fire growth.
Ignitability	BS EN ISO 11925-2 (30s)	Compliant (class BL requirement)	Resists ignition under direct small-flame impingement; flame spread not exceeding 150mm vertically within 60s.
Smoke Production	BS EN 13823	s3	Smoke: The product produces the maximum amount of smoke permitted within the classification system.
Flaming Droplets/Particles	BS EN 13823	d0	No Flaming Droplets: The product does not produce any flaming droplets or particles, preventing further fire spread.
Overall Euroclass Classification	BS EN 13501-1	BL-s3,d0	

Fire Performance Class B

Characteristic	Test Method	Classification	Performance Description
Reaction to Fire	BS EN 13823	BL	Very Limited Contribution to Fire: The product offers high fire resistance and will not significantly contribute to fire growth.
Ignitability	BS EN ISO 11925-2 (30s)	Compliant (class BL requirement)	Resists ignition under direct small-flame impingement; flame spread not exceeding 150mm vertically within 60s.
Smoke Production	BS EN 13823	s1	Low Smoke: The product produces very little or no smoke, minimum within the classification system.
Flaming Droplets/Particles	BS EN 13823	d0	No Flaming Droplets: The product does not produce any flaming droplets or particles, preventing further fire spread.
Overall Euroclass Classification	BS EN 13501-1	BL-s1,d0	