

## Copper Tube, Fittings, Fixtures and Accessories

BS EN 13348 Degreased Medical Grade  
Seamless Copper Tube

### Classification

- Pipeline solutions for medical installations
- Degreased copper tubes to BS EN 13348 and Kite marked, as specified in the latest NHS specification HTM 02-01 (which replaces HTM 2022)

### Services

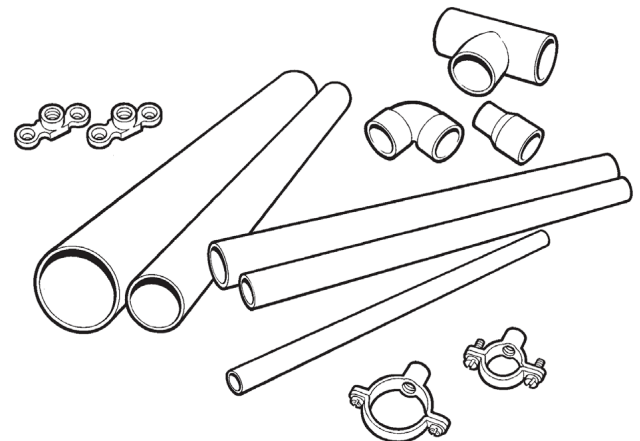
- Oxygen
- Nitrous Oxide
- 50% Oxygen / 50% Nitrous Oxide
- Air 400 kPa (4 bar)
- Air 700 kPa (7 bar)
- Medical Vacuum
- Nitrogen
- Carbon Dioxide
- Helium
- Xenon
- Specific mixtures of the above gases
- AGSS

### Applications for BS EN 13348

- Specifically designed for copper medical gas and vacuum systems, recognising the specialist requirements of the medical gas market
- Supplied in 6 m lengths and individually capped as standard
- BS EN 13348 supersedes earlier 'hybridised' copper tube standards such as BS EN 1057 and BS 2871 Part 1 Table X quoted in HTM 2022, HTM02-01 and NHS engineering specification C11
- BS EN 1057 is still available
- Kite marked tube as defined in Section 5 of C11

### Specific Benefits of using BS EN 13348

- Tighter limits on cleanliness determination
- Improved identification to avoid confusion with similar sizes of water service tube
- Lawton Tubes were the first British company to be awarded the Kite mark license to supply to this standard, which now covers copper tube up to and including 108 mm.



### Specification

Size	Thickness	Length (m)	Tubes per bundle	Working Pressure
12 mm	0.6 mm	6	10 tubes	77 bar
15 mm	0.7 mm	6	10 tubes	63 bar
22 mm	0.9 mm	6	10 tubes	58 bar
28 mm	0.9 mm	6	10 tubes	51 bar
35 mm	1.0 mm	6	1 tube	40 bar
42 mm	1.0 mm	6	1 tube	42 bar
54 mm	1.0 mm	6	1 tube	27 bar
76 mm	1.5 mm (minimum)	6	1 tube	29 bar
108 mm	1.5 mm (minimum)	6	1 tube	16 bar

### Manufacturing Standard

- BS EN 13348
- Unified wall thickness

### Chemical composition

- CU.DHP to 1190-1
- CW024A to EN1412

### Temper

- 12 mm to 54 mm - Half hard (Designated R250)
- 76 mm to 108 mm - Hard (Designated R290)

### Cleanliness

- Maximum total Carbon content 0.20 mg/dm<sup>2</sup>

### Packaging

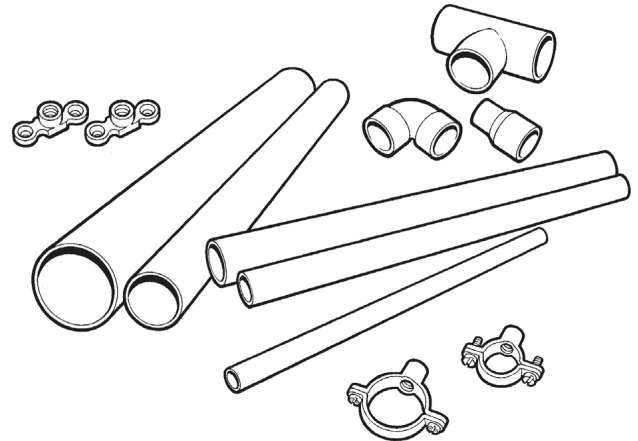
- Each tube is individually end capped, and tube bundles are polythene wrapped and sealed

### Identification and Traceability

- Each tube is labelled with the
  - Size
  - BSI trademark
  - EN 13348
  - Temper
  - Extruder

### Note:

12, 15, 22 and 28 mm lengths are date and batch labelled via inkjet marking



### Copper Fittings

- Straight couplings
- 90° elbows
- 45° elbows
- Equal tees
- Reducing tees
- Reducing couplings
- Insert reducers
- Tube end caps

### Copper Fittings Standards

- BS 6017, Non arsenical copper
- BS 1254-1, end feed capillary
- Individually bagged and marked degreased for oxygen use, as per 13.16 in HTM 2022

### Gas Identity Tape

- 150 mm wide x 33 m long tape available for:
  - Oxygen
  - Nitrous Oxide
  - 50% Oxygen / 50% Nitrous Oxide
  - Air 400 kPa (4 bar)
  - Air 700 kPa (7 bar)
  - Medical Vacuum
  - AGSS
  - Exhaust
- 50 mm x 33 m directional arrow tape
- 50 mm x 33 m Industrial gases, please contact the sales department for further information

### Silver Solder (for Site Installations)

Type of Product	Silver brazing alloy
Composition	6% Silver 87% Copper 7% Phosphorous
Melting Range	645 to 720°C
DIN Standard	DIN 8513 : L-Ag6P
Appearance	Copper coloured metal
Health Hazard Data	TLV Odour threshold
Silver	0.1 mg/m <sup>3</sup> as fume
Copper	0.2 mg/m <sup>3</sup> as fume
Phosphorous	1 mg/m <sup>3</sup> as phosphoric acid

For in-house manufacturing purposes Pneumatech Medical gas Solutions uses a higher content of silver for soldering processes (approximately 55%). This is available on request.

### Pipework Support Systems

- Copper tube wall or ceiling fixing components
- Brass single munsen rings
- Brass double munsen rings
- Brass hospital brackets
- Threaded studding
- Screws and anchors