G E





Crane copper tube is manufactured to BSEN1057 standards using the highest grade raw materials and modern extruding and drawing technology to provide superior products for water, gas and waste in domestic, commercial and industrial applications.



### **Crane Copper Tube – BSEN1057**

- → Quality Certified: Crane copper tube is Australian made, and is certified to comply with BSEN1057 Seamless, round copper tubes for water and gas in sanitary and heating applications.
- → Internal Surface Quality: Crane Copper Tube uses special manufacturing processes to provide enhanced internal bore characteristics that offer improved corrosion resistance and levels of carbon residue well below the values set by the Standard.
- → Multi Applications: Crane copper tube has great versatility for multiple uses including hot and cold water, above and below ground services, gas reticulation, sanitary and drainage, heating and general plumbing applications.
- → **Pre-insulated Tube**: Crane copper tube also manufactures 'Polylag', a pre-insulated tube which provides increased thermal insulation, reduces noise transmission and better condensation control.
- → Inherent Strength: Copper tube has inherent strength, providing good resistance to external damage, puncture, abrasion, vibration bumps, and has a wide operating range for pressure and vacuum.
- → Impervious: Copper tube is impervious to oxygen, insecticide, solvents and toxins.
- → Non-Flammable: Copper tube is non-flammable and does not emit toxic fumes during fire.
- → **Full Flow Joints**: Copper tube jointing does not reduce the bore of the tube, therefore providing high flow performance.
- → Low Friction Loss: Copper tube provides high flow rates with minimal external dimensions.
- → **U.V. Resistant**: Copper tube does not degrade from direct sunlight or become brittle with age.
- → Resists Rodent Attack: Copper tube is not prone to damage due to rodent attack.
- → **Standard Industry Sizes**: Copper tube is made to industry standard sizes not a unique brand size.
- → **Stability**: Copper tube does not creep with age and has 7 to 15 times less lineal expansion than other materials with heat, and continues to perform at high temperatures.
- → **Healthier & Non-tainting**: Copper tube does not adversely affect the taste of water, and \*reduces the number of harmful micro-organisms in water.

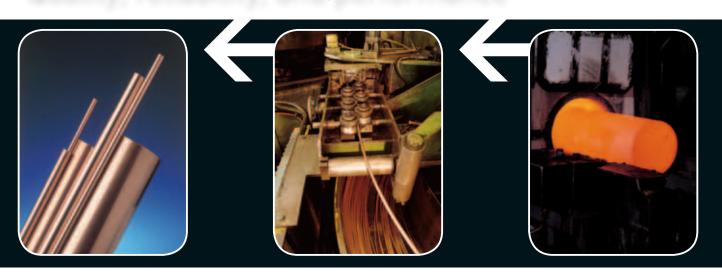
  \*Study conducted by INCRA under project N°348 1984 using water contaminated with coliforms.
- → **Proven Track Record**: Crane copper tube is part of a superior system with a proven track record.
- → Add Value For Life: Copper tube adds value and is recognised as the superior plumbing material.
- → **Recyclable**: Copper tube is a valuable recyclable material.

|                         | BSEN1057 TYPE X COPPER TUBE |                           |                             |               |           |   |  |
|-------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-----------|---|--|
| Crane<br>Item<br>Number | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper    | Safe working<br>pressure (Bar)<br>at up to 65°C |  |
| 50103093                | 15                          | 0.7                       | 0.281                       | 5.8m Straight | ½H (R250) | 58.7  |  |
| 50103193                | 22                          | 0.9                       | 0.533                       | 5.8m Straight | ½H (R250) | 51.2  |  |
| 50103242                | 28                          | 0.9                       | 0.685                       | 5.8m Straight | ½H (R250) | 39.9  |  |
| 50103286                | 35                          | 1.2                       | 1.139                       | 5.8m Straight | H (R290)  | 51.5  |  |
| 50103311                | 42                          | 1.2                       | 1.375                       | 5.8m Straight | H (R290)  | 42.6  |  |
| 50103334                | 54                          | 1.2                       | 1.780                       | 5.8m Straight | H (R290)  | 33.0  |  |
| 50103354                | 66.7                        | 1.2                       | 2.208                       | 5.8m Straight | H (R290)  | 26.6  |  |
| 50103361                | 76.1                        | 1.5                       | 3.143                       | 5.8m Straight | H (R290)  | 29.2  |  |
| 50103377                | 108                         | 1.5                       | 4.487                       | 5.8m Straight | H (R290)  | 20.4  |  |
| 50103381                | 133                         | 1.5                       | 5.540                       | 5.8m Straight | H (R290)  | 16.5  |  |
| 50103389                | 159                         | 2.0                       | 8.819                       | 5.8m Straight | H (R290)  | 18.5  |  |

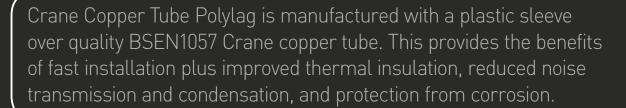
|                         | BSEN1057 TYPE Y COPPER TUBE |                           |                             |               |           |   |  |
|-------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-----------|---|--|
| Crane<br>Item<br>Number | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper    | Safe working<br>pressure (Bar)<br>at up to 65°C |  |
| 50103095                | 15                          | 1.0                       | 0.393                       | 5.8m Straight | ½H (R250) | 85.7  |  |
| 50103195                | 22                          | 1.2                       | 0.701                       | 5.8m Straight | ½H (R250) | 69.2  |  |
| 50103245                | 28                          | 1.2                       | 0.903                       | 5.8m Straight | ½H (R250) | 53.7  |  |
| 50103240                | 35                          | 1.5                       | 1.411                       | 5.8m Straight | H (R290)  | 64.9  |  |
| 50103314                | 42                          | 1.5                       | 1.706                       | 5.8m Straight | H (R290)  | 53.7  |  |
| 50103335                | 54                          | 2.0                       | 2.921                       | 5.8m Straight | H (R290)  | 55.8  |  |
| 50103355                | 66.7                        | 2.0                       | 3.634                       | 5.8m Straight | H (R290)  | 44.8  |  |
| 50103363                | 76.1                        | 2.0                       | 4.162                       | 5.8m Straight | H (R290)  | 39.1  |  |
| 50103378                | 108                         | 2.5                       | 7.408                       | 5.8m Straight | H (R290)  | 34.4  |  |

<sup>1</sup> Bar = 0.1N/mm<sup>2</sup> = 100kPa.

## Quality, reliability, and performance





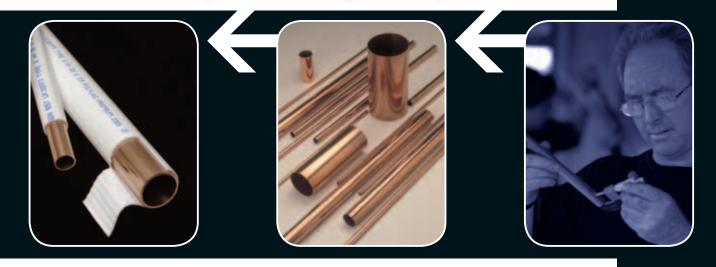




# Crane Copper Tube - Polylag

- → Polylag Plastic Sleeved Tube: Crane Copper Tube Polylag is manufactured with non-castellated plastic lagging. This product is particularly useful in aggressive environments and below ground applications.
- → Polylag Premium: Crane Copper Tube Polylag Premium has a castellated plastic sleeve which forms air pockets around the tube, creating an effective thermal barrier (since air is a poor conductor of heat), and improving thermal insulation properties.
- → Reduced Noise & Condensation: The castellated plastic sleeve significantly reduces noise transmission and condensation.
- → Ideal for Laying in Concrete: The plastic sleeve around Polylag tube protects the tube from corrosive environments and abrasion.
- → Fast & Cost Effective: Ready to install reduces costs compared to time consuming hand lagging.

### Quality, reliability, and performance



## Water $\rightarrow$ Gas $\rightarrow$ Waste

| BSEN1057 TYPE X – POLYLAG |                             |                           |                             |               |           |   |  |
|---------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-----------|---|--|
| Crane<br>Item<br>Number   | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper    | Safe working<br>pressure (Bar)<br>at up to 65°C |  |
| 50103091                  | 15                          | 0.7                       | 0.281                       | 5.8m Straight | ½H (R250) | 58.7  |  |
| 50103190                  | 22                          | 0.9                       | 0.533                       | 5.8m Straight | ½H (R250) | 51.2  |  |
| 50103226                  | 28                          | 0.9                       | 0.685                       | 5.8m Straight | ½H (R250) | 39.9  |  |
| 50103235                  | 35                          | 1.2                       | 1.139                       | 5.8m Straight | H (R290)  | 51.5  |  |
| 50103236                  | 42                          | 1.2                       | 1.375                       | 5.8m Straight | H (R290)  | 42.6  |  |
| 50103237                  | 54                          | 1.2                       | 1.780                       | 5.8m Straight | H (R290)  | 33.0  |  |
| 50103238                  | 67                          | 1.2                       | 2.218                       | 5.8m Straight | H (R290)  | 26.4  |  |
| 50103239                  | 76                          | 1.5                       | 3.139                       | 5.8m Straight | H (R290)  | 29.2  |  |
| 50126403                  | 108                         | 1.5                       | 4.487                       | 5.8m Straight | H (R290)  | 20.4  |  |

| BSEN1057 TYPE X – POLYLAG PREMIUM |                             |                           |                             |               |           |   |  |
|-----------------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-----------|---|--|
| Crane<br>Item<br>Number           | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper    | Safe working<br>pressure (Bar)<br>at up to 65°C |  |
| 50103092                          | 15                          | 0.7                       | 0.281                       | 5.8m Straight | ½H (R250) | 58.7  |  |
| 50103191                          | 22                          | 0.9                       | 0.533                       | 5.8m Straight | ½H (R250) | 51.2  |  |
| 50103227                          | 28                          | 0.9                       | 0.685                       | 5.8m Straight | ½H (R250) | 39.9  |  |
| 50103300                          | 35                          | 1.2                       | 1.139                       | 5.8m Straight | H (R290)  | 51.5  |  |
| 50103301                          | 42                          | 1.2                       | 1.375                       | 5.8m Straight | H (R290)  | 42.6  |  |
| *                                 | 54                          | 1.2                       | 1.780                       | 5.8m Straight | H (R290)  | 33.0  |  |

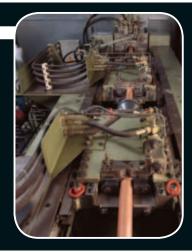
|                         | BSEN1057 TYPE Y – POLYLAG   |                           |                             |               |           |   |  |  |
|-------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-----------|---|--|--|
| Crane<br>Item<br>Number | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper    | Safe working<br>pressure (Bar)<br>at up to 65°C |  |  |
| 50103097                | 15                          | 1.0                       | 0.393                       | 5.8m Straight | ½H (R250) | 85.7  |  |  |
| *                       | 22                          | 1.2                       | 0.701                       | 5.8m Straight | ½H (R250) | 69.2  |  |  |
| 50103241                | 28                          | 1.2                       | 0.903                       | 5.8m Straight | ½H (R250) | 53.7  |  |  |
| 50113413                | 35                          | 1.5                       | 1.411                       | 5.8m Straight | H (R290)  | 64.9  |  |  |
| *                       | 42                          | 1.5                       | 1.706                       | 5.8m Straight | H (R290)  | 53.7  |  |  |
| *                       | 54                          | 2.0                       | 2.921                       | 5.8m Straight | H (R290)  | 55.8  |  |  |
| *                       | 67                          | 2.0                       | 3.651                       | 5.8m Straight | H (R290)  | 44.6  |  |  |
| *                       | 76                          | 2.0                       | 4.157                       | 5.8m Straight | H (R290)  | 39.2  |  |  |

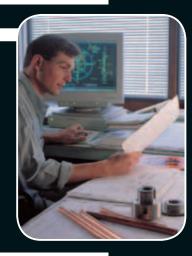
| BSEN1057 TYPE Y – POLYLAG PREMIUM |                             |                           |                             |               |             |   |  |
|-----------------------------------|-----------------------------|---------------------------|-----------------------------|---------------|-------------|---|--|
| Crane<br>Item<br>Number           | Outside<br>Diameter<br>(mm) | Wall<br>Thickness<br>(mm) | Nominal<br>Weight<br>(kg/m) | Form          | Temper      | Safe working<br>pressure (Bar)<br>at up to 65°C |  |
| 50103096                          | 15                          | 1.0                       | 0.393                       | 5.8m Straight | 1/2H (R250) | 85.7  |  |
| *                                 | 22                          | 1.2                       | 0.701                       | 5.8m Straight | ½H (R250)   | 69.2  |  |
| *                                 | 28                          | 1.2                       | 0.903                       | 5.8m Straight | ½H (R250)   | 53.7  |  |
| *                                 | 35                          | 1.5                       | 1.411                       | 5.8m Straight | H (R290)    | 53.7  |  |
| *                                 | 42                          | 1.5                       | 1.706                       | 5.8m Straight | H (R290)    | 44.4  |  |

<sup>\*</sup> Tube made to order where minimum order quantities are required.

1 Bar = 0.1N/mm<sup>2</sup> = 100kPa.









#### **Physical Properties of Copper Tube**

| Composition           | Alloy C12200 Copper= 99.90%min;<br>Phosphorus=0.015-0.040% |  |
|-----------------------|--|--|
| Melting point         | 1083°C   |  |
| Density               | 8.94 x 10³kg/m³  |  |
| Thermal Expansion     | 0.177mm/10°C.m   |  |
| Modulus of Elasticity | 17,000 MPa   |  |

| Tube Temper    | Nominal Outside<br>Diameter | MPa* | Minimum<br>Elongation | Hardness¥ |
|----------------|-----------------------------|------|-----------------------|-----------|
| R220 Annealed  | 6 to 54mm                   | 220  | 40%                   | 40 to 70  |
| R250 Half Hard | 6 to 66.7mm                 | 250  | 30%‡                  | 75 to 100 |
| R250 Half Hard | 6 to 159mm                  | 250  | 20%‡                  | 75 to 100 |
| R290 Hard      | 6 to 267mm                  | 290  | 3%                    | 100 min.  |

 $<sup>\</sup>ddagger$  Elongation for half hard tubes depends on the ratio of outside diameter to wall thickness

Information contained in this brochure is provided as a guide only. Crane Copper Tube does not warrant that the information is accurate or without errors or omissions. Crane Copper Tube reserves the right to correct any errors or misprints. All information and product details contained within this document are provided as a guide only.

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Your local agent:





<sup>\*</sup> MPa = Minimum tensile strength

<sup>¥</sup> Hardness HV/5 indicative