



**GALPRO STYLEX**

# **COPPER TUBE TECHNICAL GUIDE - GAS**



**Where would we be without Gas?**

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# INTRODUCTION

Copper tube piping is suitable for gasfitting in a range of applications from domestic, commercial, industrial, caravans, marine etc. Its chemical composition makes it resistant to corrosion as well as adaptable through bending and shaping to fit into each unique application.

As part of the AS/NZS 5601 Standard, copper is suitable and approved for gas piping with Natural Gas and LPG (vapour), the information in this guide has been provided based on AS/NZS Standards and GSL Copper tube specifications to be used as a guidance only. Whilst time and attention has been taken to ensure accuracy, no liability will be taken by Galpro Stylex for any outcomes that may arise as a result of this guide.

## COPPER TUBE PROPERTIES

GSL Copper Tube (**Alloy C12200**) - Phosphorus Deoxidised Copper

### Chemical Composition:

Copper: 99.90% (minimum)  
Phosphorus: 0.015% - 0.040%

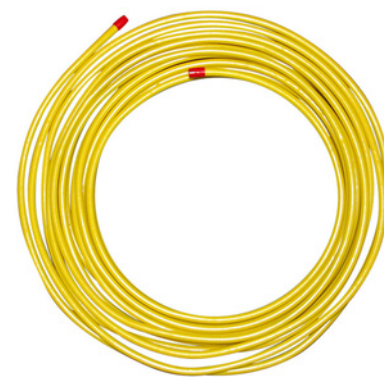
- Seamless copper tube available in lengths and coils
- Available as insulated PE coated
- Warranty: 10 years
- Supported by a range of copper fittings
- Strong, reliable and versatile
- Meets required AS Standards for AS/NZS compliance

Properties	
Melting Point	1083°C
Density	8.94 x 10 <sup>3</sup> kg/m <sup>3</sup> at 20°C
Specific Heat Capacity	0.385 kJ/kg.K
Hot Work Temperature	750°C - 875°C
Annealing Range	450°C - 600°C
Tensile Strength	245 - 247 Mpa
Modulus of Elasticity	117 GPa
Modulus of Rigidity	44 GPa

# INSULATED COPPER TUBE

Insulated copper tube has a plastic sheathing to protect the copper surface in certain applications (corrosive soils, laying under concrete, where the pipework is exposed to corrosive environments). The tough plastic sheathing is impermeable, UV resistant and waterproof to ensure total protection of the copper within even in direct sunlight.

The plastic sheathing is flexible enough to bend with the copper to suit the installation without damaging the integrity of the protection. Where joints and connections are made in a potentially corrosive environment, joints must be covered/protected to ensure the seal remains intact.



## SAFE WORKING PRESSURE CALCULATIONS

For Copper coils outside of the dimensions listed on the previous page or in areas where temperatures could exceed 50°C, you can use the following calculation to work out the safe working pressure of the copper tube you aim to be using.

$$P_{sw} = \frac{2000 \times S_d \times t_{min}}{D - t_{min}}$$

D = Outside Diameter (mm)

P<sub>sw</sub> = Safe Working Pressure (kPa)

S<sub>d</sub> = Annealed tube maximum design tensile stress

T = Temperature factor (see below)

t<sub>min</sub> = Minimum copper wall thickness (mm)

Temperature Range (°C)	Max. design tensile stress (MPa)	T (temperature factor)
Up to 50	41	1.00
50 - 75	34	0.83
75 - 125	33	0.80
125 - 150	32	0.78
150 - 175	28	0.68
175 - 200	21	0.51

# GSL COPPER TUBE DIMENSIONS

GSL Code	Description	Size O.D - metric (mm)	Copper Thickness (mm)	Size O.D - Imperial	Safe Working Pressure (Bar)	Design Standard
CT02	Bare Copper Coil - 15mtr	3.18	0.76	1/8"	30.74	ASTM B280
CT6938	Bare Copper Coil - 15mtr	4.00	0.6	0.16	Max. 162	BS EN 12449
CT03	Bare Copper Coil - 15mtr	4.76	0.71	3/16"	143.70	AS 1432 AS 1571
CT6939	Bare Copper Coil - 10mtr	6.00	0.6	0.24	Max. 90	BS EN 1057
CT04	Bare Copper Coil - 15mtr	6.35	0.71	1/4"	85.6	AS 1432 AS 1571
CT05	Bare Copper Coil - 15mtr	7.94	0.71	5/16"	67	AS 1432 AS 1571
CT05-CV	PE Coated Copper Coil - 15mtr	7.94	0.71	5/16"	67	AS 1432 AS 1571
CT06	Bare Copper Coil - 15mtr	9.53	0.71	3/8"	55.2	AS 1432 AS 1571
CT06-CV	PE Coated Copper Coil - 15mtr	9.43	0.71	3/8"	55.2	AS 1432 AS 1571
CTB920619	Bare Copper Coil - 10mtr	10.00	0.70	0.39	Max. 62	BS EN 1057
CT08	Bare Copper Coil - 15mtr	12.7	0.71	1/2"	40.7	AS 1432 AS 1571
CT08-CV	PE Coated Copper Coil - 15mtr	12.7	0.71	1/2"	40.70	AS 1432 AS 1571

The Safe Working Pressure is based on temperatures up to 50°C