

Resistance Copper

Resistance Copper is specially selected for consistent resistivity and carefully processed in order to provide a high quality, cost effective resistance wire.

Resistance Copper is available in sizes down to 0.1 mm.

Physical and Mechanical Properties

Values stated are nominal or typical.

	Units	Value
Maximum continuous operating temperature in air	°C	300
	°F	572
Nominal composition	%	Cu > 99.9
Density at 20°C	g/cm ³	8.9
	lb/in ³	0.321
Resistivity at 20°C	μΩcm	1.73
	Ω/cm ²	10.4
Temperature Coefficient of Resistance, 20–200°C	1/K	0.00393
Coefficient of thermal expansion, 20 – 300°C	1/K	18 x 10 ⁻⁶
	1/°F	10 x 10 ⁻⁶
Thermal conductivity at 20°C	W/mK	400
	Btu.in/ft ² .	2825
	h.°F	
Specific heat capacity at 20°C	kJ/kgK	0.386
	Btu/lb°F	0.09
Melting point (approx.)	°C	1150
	°F	2102
Typical Tensile strength - annealed *	N/mm ²	220
	lb/in ²	32000
Typical Tensile Strength – fully cold worked *	N/mm ²	385
	lb/in ²	56000
Typical Elongation at break - annealed *	%	≥ 25
Modulus of Elasticity (tension) at 20°C – annealed	N/mm ²	117000
	lb/in ²	17 x 10 ⁶
Modulus of Rigidity (torsion) at 20°C - annealed	N/mm ²	44000
	lb/in ²	6.4 x 10 ⁶

* Values will vary dependant upon wire diameter.

Information contained within this technical data sheet is based upon the general experience of Scott Precision Wire Ltd and is believed to be correct at the time of issue. No warranty is given or is to be implied from the details above. Customers are advised to carry out independent tests in order to determine the suitability of any Scott Precision Wire Ltd product for an application.