

19 x 0.523mm (0.574mm king) Cromaloy 5 Stranded Wire

Scott Precision Wire concentric stranded resistance wires are specially manufactured to provide consistent resistance and heating characteristics. Cromaloy 5 is able to withstand progressive oxidation due to its resistance to oxide scaling and superior thermal fatigue properties.

Resistance 0.276 – 0.306 Ω /m

Construction

Centre	1 x 0.574mm
Layer 1	6 x 0.523mm Right Hand Lay
Layer 2	12 x 0.523mm Left Hand Lay

Cromaloy 5 Physical and Mechanical Properties

	Units	
Maximum continuous operating temperature in air	$^{\circ}\text{C}$	1250
Nominal composition	%	Ni 80 Cr 20
Density at 20 $^{\circ}\text{C}$	g/cm^3	8.3
Resistivity at 20 $^{\circ}\text{C}$	$\mu\Omega\text{cm}$	109
Thermal conductivity at 20 $^{\circ}\text{C}$	W/mK	14.6
Specific heat capacity at 20 $^{\circ}\text{C}$	kJ/kgK	0.420
Melting point (approx.)	$^{\circ}\text{C}$	1400

Temperature dependant Factors for Cromaloy 5

Reference temperature 20 $^{\circ}\text{C}$

Temp $^{\circ}\text{C}$	200	400	600	800	1000	1200
Temp $^{\circ}\text{F}$	392	752	1112	1472	1832	2192
Resistivity Factor	1.015	1.034	1.034	1.029	1.039	1.058
Coeff. of thermal expansion ($10^{-6}/\text{K}$)	14.0	15.0	15.5	16.0	17.0	

The figures given in these tables represent nominal or typical values.

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