

# Welding Alloys: Thermal Spray Wire

Thermal Spray wires are used in arc and flame spray systems. These are austenitic alloys that produce dense, well-bonded coatings. These coatings are used for protection against corrosion and high temperature oxidation. They are also used as build-up coatings for dimensional correction.

Nominal Chemical Composition (wt%)							
JLC Classification	Ni	Cu	Al	Cr	Mn	Fe	Si
Nickel 99	Min 99.2	Max 0.2	-	-	Max 0.3	Max 0.4	Max 0.5
NiAl5	Balance	-	Min 4.5	-	-	-	-
JLC 400	Min 63.0	Balance	-	-	Max 1.25	Max 2.50	Max 0.5
NiCr 80:20	Balance	-	-	19.0-21.0	Max 1.0	Max 2.0	1.0-1.7
NiCr 60:15	57.0-60.0	-	-	14.0-18.0	Max 1.0	Balance	1.0-1.7
NiCr 40:20	34.0-37.0	-	-	18.0-21.0	Max 1.0	Balance	1.6-2.5

Physical Properties		
Alloy	Density (g/cm <sup>3</sup> )	Electrical Resistivity at 20°C (μΩ-cm)
Nickel 99	8.9	9
NiAl5	8.2	42
JLC 400	8.8	50
NiCr 80:20	8.3	108
NiCr 60:15	8.2	112
NiCr 40:20	7.9	105

Nominal Mechanical Properties (1.6 mm diameter wire)			
Alloy	Tensile Strength (N/mm <sup>2</sup> )	Yield Strength (N/mm <sup>2</sup> )	Elongation (%)
NiAl5	850	780	7
JLC 400	630	577	8
NiCr 80:20	1030	950	6
NiCr 60:15	930	830	5
NiCr 40:20	950	860	6

## Form of Supply / Size Range

Diameter	mm	1.6 (+0/-0.05)
	inch	1/16

Other dimensions are also available on request  
Wires supplied on SD300 spools of 12.5 kg / 300 kg material weight