

## AI-1872SD

### Description and Applications

**AI 1872SD** is made exclusively for arc spraying. This material produces an amorphous, EXTREMELY hard, abrasive and corrosion resistant coating. This wire has the unique property of increasing hardness after prolonged use. A service environment of up to 926°C (1700°F) is possible. Conventional grinding and lapping techniques provide high chrome like finishes.

**AI 1872SD** is used primarily as a hard corrosion resistant interface. When applied 0.25mm (0.010") thick, the material exhibits impressive elasticity for a coating this hard. Typical applications use coating thicknesses up to 1.5mm (0.060")

After application, the coating can be ground using aluminium oxide and subsequently polished to under a 10 RMS surface finish. This, coupled with good bond strength, high deposit efficiency, low coefficient of friction, high deposition rates and ease of application, allows **AI 1872SD** to compete with processes that require plating or plasma technologies.

**Applications:** (Include but not limited to) Boiler Tubes & Tube Shields, Yankee Dryer Rolls, Anti-Skid, Fan Blades, Drill Collars and Hydraulic Shafts.

### Typical Overlay Analysis

Mn	Si	Cr	Ni	B	Fe
2.0	2.0	28.0	6.0	4.0	Bal

### Mechanical Properties

	As Sprayed
Deposit Efficiency	80%
Melting Point	1204°C (2,200°F) approx.
Bond Strength	69 MPa (10,000psi) @ 0.05mm thick
Macrohardness	950HV – approx. HRC 60-65 (Converted)
Coating Density	6.9gm/cm <sup>3</sup>
Finish – Ground	Excellent (Aluminium Oxide)
Corrosion Resistance	Excellent

### Spray Parameters

	Volts	Amps	Air	Distance
<b>Bond Pass</b>				
<b>Build-Up</b>	29-32	150-350	414-621kPa (60-90psi)	100-200mm

Parameters are typical and may vary depending on equipment used. Contact your equipment manufacturer for optimum spray parameters.



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### Surface Preparation

De-grease area to be sprayed and Grit Blast to a class 2.5 white metal finish using a G24 chilled iron or aluminium oxide grit.

### **DO NOT HANDLE SURFACE AFTER IT HAS BEEN PREPARED**

### Finishing

**AI 1872-SD** is usually finished by grinding with an aluminium oxide wheel or left as-sprayed. Subsequent polishing can produce a surface finish approaching 10 microinches (RMS).

### Available Sizes:

1.6mm diameter in 25# (11.34kg) precision layer wound plastic spools D-300

### Disclaimer

All figures in this datasheet should be considered indicative only. No guarantee is made as to their accuracy.

All figures subject to change without notice. Batch analysis is available for all products sold. Should you require any further information, please contact us at [sales@alloysint.com.au](mailto:sales@alloysint.com.au)



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