

## AI-1750

### Specifications

**AWS/ASME** A5.13 RNiCr - B

### Description and Applications

**AI-1750** is a premium, nickel-based MIG Wire, used for hard surfacing parts to resist wear, heat, corrosion and galling. It has greater ductility and better impact resistance and workability than **AI-1756** and **AI-1760** and displays good machineability.

Deposits of **AI-1750** should not be applied to base metals that will subsequently be hardened or tempered. The deposits also cannot be hot or cold worked; however, they can be hot formed while in the plastic condition (between solidus and liquidus temperature). It has little tendency to warp work to which it is applied.

**Applications include:** Hard surfacing of components in the petroleum industry, such as sucker rod couplings, centrifugal pump parts, heat exchanger tubes, wear rings, etc. Also used for hard surfacing camshafts (lobes), glass plungers, cement industry gate and glove valve components, dragline rollers and metalworking (forming and drawing) dies.

### Typical Weldmetal Analysis

C	Si	Cr	Ni	Fe	B
0.45	4.0	10.50	Bal	3 - 4	1.8 - 2.3

### Mechanical Properties of Weldmetal

	As Welded
Tensile Strength	414 MPa (60,000 psi) av
Density	8.14g/cc
Melting Range	Solidus 950 °C Liquidus 1065°C
Modulus of Elasticity	220,690 MPa (32,000,000 psi)
Compressive Strength	275,000 psi
Charpy Impact Strength	1.5kg
Magnetic Permeability	1.005
Coefficient of Friction	0.10(6micro" surface fin)
Thermal Expansion	50-650°C 8.4 x 10 <sup>-6</sup>
Heat Treatability, Toxicity	None
Temperature °C	25 315 425 540 650
Hardness HRC	50 48 43 41 38**
<b>Shielding Gas</b>	<b>98% Ar + 2% O<sub>2</sub> or 100% Ar</b>



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### Welding Instructions

All steels having less than 0.25% carbon, and grey cast iron; Meenanite, malleable, ingot and wrought iron; nickel, Monel alloy 400, Inconel alloy 600, Nichrome, Chrome and most high-temperature alloys can be overlaid without special precautions. Steel having more than 0.25% carbon can also be overlaid, but requires controlled slow cooling after fusion, in suitable insulation such as Vermiculite, mica, etc. For overlaying martensitic steel, see the technical data sheet.

### Welding Parameters

Diameter (mm)	Current type	Amps
1.2	DC(+)	150-220
1.6	DC(+)	180-300

### Welding Positions

(1G, 1F) Downhand/flat position, (2F) Horizontal position, (2G) Horizontal vertical position.

### Disclaimer

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