

AI-1707

Specifications

AS/NZS 2717.3 ER307Si

AWS/ASME SFA A5.9 ER307Si

ISO 14343 A G 18 8 Mn

Description and Applications

AI-1707 offers exceptionally high ductility and elongation with outstanding crack resistance. There is no fear of embrittlement when operating down to service temperatures of -110°C or up to 500°C . The scaling resistance goes up to $+850^{\circ}\text{C}$.

The weld metal can be post weld heat treated without any problems. The deposit will work harden and offers good resistance against cavitation. Ductility is good even after high dilution when welding problem steels or when subjected to thermal shock or scaling.

AI-1707 for joining: Work hardenable steels, armour plate, austenitic stainless manganese steels, heat resisting steels for temperatures up to 850°C and dissimilar steels.

AI-1707 for surfacing: Hot working tools, stainless valve steels, carbon steel items that must possess abrasion resistance in cold working.

Applications: Repair of cavitation damage in water turbines, railway and tramway rails, press rams, etc

Typical Weldmetal Analysis

C	Mn	Si	Cr	Ni	Fe
0.08	7.00	0.9	19.2	9	Bal

Mechanical Properties of Weldmetal

	As Welded
Tensile Strength	680MPa
Yield Strength (0.2%)	430MPa
Elongation	41% (5d)
Charpy V	140J (20°C)
Microstructure	Fully Austenitic
Hardness	200HBN 500HBN (Work Hardened)
Reduction of Area	61%
Shielding Gas	Argon 98% + 2% Oxygen or Argon 100%



Welding Instructions

Reverse polarity is used to give good penetration for all types of welded joints. When decreased dilution and penetration are required straight polarity is recommended.

Welding Parameters

Diameter (mm)	Current type	Amps
1.2	DC(+)	150-280
1.6	DC(+)	180-300

Also available in Open Arc Flux Cored Wire **AI-1507** and Coated Electrodes **AI-0207**

Physical Properties

Thermal Expansion per °C, from 20°C to 400°C = 0.000018

Density, g/cm³ = 7.8

Temperature (°C)	20	100	300	500
Thermal Conductivity (W/m°C)	15	16	18	20

Welding Positions

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

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



ALLOYS INTERNATIONAL PTY LTD

25 Raymond Road Laverton North Victoria 3026

Telephone: +61 3 8368 2222 | Facsimile: +61 3 8368 2200

ABN 53 112 712 286

sales@alloysint.com.au | www.alloysint.com.au