

SM-718 / ST-718

Conformances

AWS A5.14/ ASME SFA5.14 ERNiFeCr-2
 JIS Z3334 S Ni7718 (NiCr19Fe19Nb5Mo3)
 EN ISO 18274 S Ni 7718

Applications

- High-strength aircraft components
- Spindles of ship-building, engines
- Jet engine parts
- Nuclear power plants involving cryogenic temperatures

Features

- Precautions should be taken with high input processes to avoid microfissuring

Welding Position

Current

GMAW: DC+(Pulse)

GTAW: DC-

Shielding Gas

Ar, Ar + He

Diameter / Packaging

Diameter	MIG	TIG
mm (in)	12.5kg (27.6lbs)	5kg (11lbs)
1.0 (0.040)	✓	
1.2 (0.045)	✓	
1.4 (0.052)	✓	
1.6 (1/16)	✓	
2.0 (5/64)		✓
2.4 (3/32)		✓
3.2 (1/8)		✓

Typical Chemical Composition of the Wire (%)

C	Si	Mn	P	S	Cr	Ni	Mo	Fe	Nb	Ti
0.06	0.10	0.15	0.004	0.001	19.0	53.0	3.10	17.5	5.05	1.0

Typical Mechanical Properties of All-Weld Metal

YS MPa(lbs/in ²)	TS MPa(lbs/in ²)	EL (%)	Temp °C(°F)	CVN-Impact Value J (ft-lbs)
630 (91,000)	860 (125,000)	27.0	-	-

Typical Welding Parameters

Diameter, Polarity Shielding Gas	Amp. (A)	Volt. (V)
	1.2mm (0.045 in) DC+	
Ar, Ar + He	180	28
	2.4mm (3/32 in) DC-	
Ar	110	12