Welding Filler

ERNiFeCr-2

Description

ERNiFeCr-2 is a precipitation-hardening nickel-based filler metal. It is the matching consumable for Inconel®718, designed so the weld deposit responds to the same solution and age heat treatment as the 718 base material.

Conventional solid-solution nickel filler metals could not reach the full strength level of precipitation hardened Inconel® 718 after welding. It achieves high strength together with excellent cryogenic toughness after proper post-weld heat treatment, making it ideal for gas turbine hot-section components, high-pressure wellhead parts, downhole tools and cryogenic structural weldments.

Grade: UNS N07718, Inconel®718, SN7718

Chemical Composition (wt%)

Ni	Cr	Nb+Ta	Mo	Ti	Al	C	Si	Mn	P	S	Cu	Fe	Rest
50.0–55.0	17.0–21.0	4.75–5.50	2.80–3.30	0.65–1.15	0.20–0.80	≤0.08	≤0.35	≤0.35	≤0.015	≤0.015	≤0.30	Bal.	≤0.50

Technical standards

Technical Standards
AWS A5.14 / A5.14M
AWS A5.11 / A5.11M
ASME SFA-5.14
ASME SFA-5.11
ISO 18274
ISO 14172

Mechanical Properties

Property	As-Welded (Typical)	Age-Hardened (Typical)	AWS A5.14 (Aged)
Ultimate Tensile Strength	860 MPa	1240 MPa	⩾1138 MPa
0.2% Offset Yield Strength	630 MPa	1030 MPa	Not specified
Elongation (4×d)	27%	16%	Not specified
Hardness	240–280 HV	38–44 HRC	Not specified