

Inconel 600 Welding Wire (UNS N06600) — Technical Data Sheet

ERNiCr-3 / ENiCrFe-2 / ENiCrFe-3 filler metals for welding Inconel 600 — values are AWS minimum requirements; the purchase specification governs.

Chemical Composition (AWS A5.14, ERNiCr-3)

Element	Content
Nickel (Ni)	67.0% min.
Chromium (Cr)	18.0–22.0%
Iron (Fe)	3.0% max.
Niobium + Tantalum (Nb + Ta)	2.0–3.0%
Manganese (Mn)	2.5–3.5%
Titanium (Ti)	0.75% max.
Silicon (Si)	0.50% max.
Copper (Cu)	0.25% max.
Carbon (C)	0.10% max.
Phosphorus (P)	0.03% max.
Sulfur (S)	0.015% max.

Minimum All-Weld-Metal Mechanical Properties (AWS)

Product (all-weld metal)	Tensile Strength	Yield Strength	Elongation
ERNiCr-3 bare wire (AWS A5.14)	≥80 ksi (550 MPa)	Not specified by AWS	≥30%
ENiCrFe-2 electrode (AWS A5.11)	≥80 ksi (550 MPa)	Not specified by AWS	≥30%
ENiCrFe-3 electrode (AWS A5.11)	≥80 ksi (550 MPa)	Not specified by AWS	≥30%

Filler Metal Classifications

Product	AWS Class	Key Composition	Typical Strength	Best Suited For
Bare wire	ERNiCr-3 (A5.14) / S Ni 6082	Ni ≥67%, Cr 18–22%, Nb+Ta 2.0–3.0%	≥80 ksi (550 MPa)	GTAW / GMAW / SAW, one wire across four processes
Covered electrode	ENiCrFe-2 (A5.11)	Adds molybdenum 0.5–2.5%	≥80 ksi (550 MPa)	9% Ni steel LNG tanks, low-temperature cryogenic joints
Covered electrode	ENiCrFe-3 (A5.11) / Alloy 182	High manganese 5.0–9.5%	≥80 ksi (550 MPa)	Dissimilar joints with maximum crack resistance

Physical Properties (Approx.)

Property	Value
Filler Metal	ERNiCr-3 (Alloy 82)
UNS	N06082
Density	Approx. 8.4 g/cm³
Wrought Equivalence	Nickel-chromium-iron with niobium
Classification	AWS A5.14 / ASME SFA-5.14 / ASME IX F-No. 43

Standards and Designations

Standard	Product / Application
AWS A5.14	ERNiCr-3 bare nickel-chromium-iron welding wire
AWS A5.11	ENiCrFe-2 / ENiCrFe-3 covered welding electrodes
ASME SFA-5.14	ASME version of the bare filler specification
ASME SFA-5.11	ASME version of the covered electrode specification
ASME Section IX	F-No. 43 procedure qualification for ERNiCr-3
UNS N06082	Designation for ERNiCr-3 filler metal
SAE AMS 5836	Nickel alloy 82 welding wire
ISO 18274	S Ni 6082 nickel filler wire and rod
DIN 1736	SG-NiCr20Nb (W.Nr. 2.4806) welding filler

Surface Finishes

Surface Condition	Typical Characteristics / Applications
Clean Bright	Standard finish for bare ERNiCr-3 wire; nickel alloy welding wire is not copper-coated
Spool Wound	Layer-wound for smooth GMAW feeding
Straight Rods	Cut TIG rods with clean deburred ends
Vacuum Packed	Covered electrodes sealed in 5 kg moisture-resistant packs

Typical Supply Dimensions — Welding Wire

Product Form	Typical Supply	Length
TIG Filler Rod (GTAW)	1.6 / 2.0 / 2.4 / 3.2 / 4.0 mm × 1000 mm	5 kg tube
MIG Wire (GMAW)	0.8 / 0.9 / 1.0 / 1.2 / 1.6 mm	5 kg or 15 kg spool
SAW Wire	1.6–4.0 mm	25 kg coil
Covered Electrode (SMAW)	2.5 / 3.2 / 4.0 / 5.0 mm × 300 / 350 / 450 mm	5 kg vacuum pack
Custom Length	To drawing	Custom

Values are for reference; the mill test certificate prevails for final acceptance. Dimensions, heat-treatment conditions, and surface finishes are confirmed at quotation.

Southerly Alloy — nickel alloy bar, rod, pipe, tube, plate and fittings · www.southerly-alloy.com · Values are for reference; the mill test certificate prevails for final acceptance.

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