

Hastelloy B-3 Welding Wire (UNS N10675 / W.Nr. 2.4600) — Technical Data Sheet

ERNiMo-10 bare wire to AWS A5.14 (UNS N10675) and ENiMo-10 covered electrodes to AWS A5.11 (UNS W80675) for joining UNS N10675 rod supplied to ASTM B335 — all-weld-metal results are published as typical values rather than as AWS minimums, and most joints enter service as welded because Ni3Mo forms only slowly near 650 °C.

Chemical Composition — Filler base-metal reference (the deposit is certified to AWS A5.14 / A5.11)

Element	Content
Nickel (Ni)	65.0% min.
Molybdenum (Mo)	27.0–32.0%
Chromium (Cr)	1.0–3.0%
Iron (Fe)	1.0–3.0%
Tungsten (W)	3.0% max.
Cobalt (Co)	3.0% max.
Manganese (Mn)	3.0% max.
Carbon (C)	0.01% max.
Silicon (Si)	0.10% max.
Phosphorus (P)	0.030% max.
Sulfur (S)	0.010% max.
Vanadium (V)	0.20% max.
Aluminum (Al)	0.50% max.
Titanium (Ti)	0.20% max.
Copper (Cu)	0.20% max.
Columbium (Nb)	0.20% max.
Tantalum (Ta)	0.20% max.
Zirconium (Zr)	0.10% max.
Nickel plus Molybdenum	**94.0–98.0%**

All-Weld Metal Mechanical Results (typical, AWS classifications)

Product (all-weld metal)	AWS Class	Tensile Strength	Elongation
ERNiMo-10 bare wire, GTAW deposit	AWS A5.14, UNS N10675	813 MPa (118 ksi), typical	45%, typical
ERNiMo-10 bare wire, GMAW deposit	AWS A5.14, UNS N10675	834 MPa (121 ksi), typical	46%, typical
ENiMo-10 covered electrode, SMAW deposit	AWS A5.11, UNS W80675	772 MPa (112 ksi), typical	49%, typical

Filler Metal Classifications

Product	AWS Class	Chemistry Basis	Typical Strength	Best Suited For
Bare wire	ERNiMo-10 (A5.14), UNS N10675	Ni balance, Mo 27.0–32.0%, Cr 1.0–3.0%, Fe 3.0% max., C 0.02% max.	813–834 MPa (118–121 ksi) typical	GTAW primary, GMAW general
Covered electrode	ENiMo-10 (A5.11), UNS W80675	The same nickel-molybdenum analysis under a basic covering	772 MPa (112 ksi) typical	SMAW repair and build-up

Filler Metal Identification (ERNiMo-10 / ENiMo-10)

Property	Value
Parent Metal	UNS N10675, 2.4600 / NiMo29
Bare Filler	ERNiMo-10 (AWS A5.14)
Covered Electrode	ENiMo-10 (AWS A5.11)
Covered Electrode UNS	W80675
Molybdenum	27.0–32.0% in the parent metal
Chromium	1.0–3.0% deliberately added to the parent metal
Carbon	0.01% max. in the parent metal
Nickel plus Molybdenum	94.0–98.0% combined in the parent metal
Strengthening Route	Cold work only, because the grade takes nothing from aging

Standards and Designations

Standard	Product or Application
AWS A5.14	ERNiMo-10 bare nickel-molybdenum welding wire
AWS A5.11	ENiMo-10 covered electrode, UNS W80675
ASME SFA-5.14	ASME version of the bare filler specification

Surface Finishes (Welding Wire)

Surface Condition	Typical Use
Clean Bright	The standard surface for bare ERNiMo-10 welding wire, free of drawing lubricant.
Straight Rods	Cut TIG lengths of this welding wire with clean, deburred ends.
Spooled	This welding wire wound onto spools or carriers at an even tension.

Typical Supply Dimensions — Welding Wire

Product Form	Typical Supply	Length
TIG Filler Rod (GTAW)	1.6 / 2.4 / 3.2 mm × 914 mm	5 kg tube
MIG Wire (GMAW)	0.9 / 1.2 / 1.6 mm	Spool
Coiled Wire	0.9 / 1.1 / 1.6 mm dia.	Coil
Straight Cut Lengths	1.6–3.2 mm dia.	Straight lengths
Covered Electrode (SMAW)	2.4 / 3.2 / 4.0 mm	Sealed pack
Custom Winding	To drawing	Custom

Values are for reference; the mill test certificate prevails for final acceptance. Designations, heat-treatment conditions, and surface finishes are confirmed at quotation.
Southerly Alloy — nickel alloy bar, rod, pipe, tube, plate, wire and fittings · www.southerly-alloy.com · Values are for reference; the mill test certificate prevails for final acceptance.
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