

Alloy 625

NiWire Alloy 625 is a nickel-chromium-molybdenum alloy with low iron used for GTAW, GMAW, and SAW and used in the welding of ASTM B443, B444, and B446 having UNS Number N06625.

Specification

AWS A5.14-8 Class ERNiCrMo-3
ASME SFA5.14 Class ERNiCrMo-3

Chemical Composition

Composition limits. 0.10 max C; 0.50 max Mn; 1.0 max Fe; 0.02 max P; 0.015 max S; 0.50 max Si; 0.50 max Cu; 58.0 min Ni; 0.40 max Al; 0.40 max Ti; 20.0-23.0 Cr; 3.15-4.15 Nb+Ta; 8.0-10.0 Mo

Applications

Typical uses: NiWire Alloy 625 is a versatile filler metal that is used for welding of dissimilar joints between nickel-chrome-molybdenum alloys and stainless, carbon or low alloy steels. It is used extensively when welding various nickel alloys such as 9% nickel steel, Monel®, Inconel®, 385/904L, 254SMO, and AL-6XN. NiWire Alloy 625 is also widely used to maximize alloy performance in a single layer deposit to the iron content is restricted to 0.80 max to ensure the highest corrosion standard in overlaying applications.

Mechanical Properties

Tensile properties of Alloy 625:
Tensile Strength: 110,000 PSI 760 MPa
Yield Strength: 85,000 PSI 590 MPa
Elongation: 25%

Standard Packaging

TIG 11 lbs (5kgs) per tube
MIG 33 lbs (15kgs) per spool
Sub-Arc 60 lbs (27kgs) per coil

Welding Parameters

PROCESS	SIZE	VOLTS	AMPS	SPEED OF WELDING/GAS FLOW	SHIELDING GAS/FLUX
GTAW	0.9mm	12-15	60-90	30-40 CFH	100% Argon
	1.2mm	13-16	80-110	30-40 CFH	100% Argon
	1.6mm	14-18	90-130	30-40 CFH	100% Argon
	2.4mm	15-20	120-175	30-40 CFH	100% Argon
	3.2mm	15-20	150-220	30-40 CFH	100% Argon
GMAW	0.9mm	29-33	160-180	30-50 CFH	75% Argon+25% Helium or 50% Argon+50% Helium
	1.2mm	29-33	180-220	30-50 CFH	
	1.6mm	29-33	210-250	30-50 CFH	
SAW	1.6mm	25-28	220-280	10-14 IPM	Suitable Flux
	2.4mm	29-32	300-350	10-14 IPM	Suitable Flux

*Monel and Inconel is trademark of Special Metals.