

Techalloy® 312

AWS ER312

CONFORMANCES

AWS A5.9 ER312

UNS S31380

ISO 14343: 2009 (29 9)



Techalloy® 312 is used to weld cast and wrought alloys of similar compositions. The electrode can also be used for joining hard to weld materials and dissimilar metals. Applications should be limited to 800°F (420°C). The weld deposits exhibit high tensile strength and offer some resistance to abrasion.

Applications: Tool steels, Hard to weld steels, Cast and wrought alloys, Dissimilar metals

DIAMETERS / PACKAGING

Diameter in (mm)		MIG WIRE 33 lb (14.9 kg) Wire Basket	TIG WIRE 10 lb (4.5 kg) Tube 30 lb (13.6 kg) Master Carton
0.045	(1.2)	MG312045667	
1/16	(1.6)	MG312062667	TG312062638
3/32	(2.4)		TG312093638
1/8	(3.2)		TG312125638

DEPOSIT COMPOSITION

	%C	%Cr	%Ni	%Mo	%Mn
Requirements AWS ER312	0.15 max.	28.0 - 32.0	8.0 - 10.5	0.75 max.	1.0 - 2.5
Typical Performance Techalloy® 312	0.11	29.6	8.9		1.6
	%Si	%P	%S	%Cu	FN
Requirements AWS ER312	0.30 - 0.65	0.03 max.	0.03 max.	0.75 max.	Not Required
Typical Performance Techalloy® 312	0.44	0.02	0.01	0.10	50 - 80

TYPICAL OPERATING PROCEDURES

Process	Diameter in (mm)	Voltage (volts)	Amperage	Gas Flow	Gas
MIG	0.045 (1.2) 1/16 (1.6)	28-32 29-33	180-250 200-280	30-50 CFH	98/99% Argon + 2/1% Oxygen 97% Argon + 3% CO ₂
TIG	1/16 (1.6) 3/32 (2.4) 1/8 (3.2)		90-130 120-175 150-220	20-40 CFH	100% Argon

Material Safety Data Sheets (MSDS) are available on our website at www.techalloy.com

TEST RESULTS

Test results for mechanical properties, deposit or electrode composition and diffusible hydrogen levels were obtained from a weld produced and tested according to prescribed standards, and should not be assumed to be the expected results in a particular application or weldment. Actual results will vary depending on many factors, including, but not limited to, weld procedure, plate chemistry and temperature, weldment design and fabrication methods. Users are cautioned to confirm by qualification testing, or other appropriate means, the suitability of any welding consumable and procedure before use in the intended application.

CUSTOMER ASSISTANCE POLICY

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