



Alloy 625 Wire & Rod

U.S. ALLOY CO.
dba Washington Alloy
7010-G Reames Rd.
Charlotte, NC 28216
www.weldingwire.com

Quality Management System
in accordance with
ISO 9001
Cert # 05-R0925



Washington Alloy 625 is a nickel-chromium-molybdenum filler metal used for MIG, TIG, submerged arc and plasma arc welding on alloys 601, 625 and 690 as well as alloys 800, 825 and 800HT to themselves or to each other.

Washington Alloy 625 is excellent for joining these Nickel base alloys to dissimilar metal such as carbon steel, low alloy steel, ferritic and austenitic stainless steels. This filler metal produces weld deposits with excellent corrosion and oxidation resistance against phosphoric acids, organic acids and seawater. Good resistance against pitting and stress corrosion cracking in chloride containing environments. The weld deposits exhibit high strength and fatigue resistance over a broad range of temperatures ranging from cryogenic up to 1800F. Washington Alloy 625 is most commonly used in the chemical processing industry, pollution control equipment, marine equipment, nuclear reactor components, and pump shafts. Also used in the aerospace industry for thrust reverser assemblies, fuel nozzles, after-burners and combustion systems.

TYPICAL GMAW WELDING PROCEDURES; DCEP Spray Arc

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	Argon (cfh)
0.030	550-750	175-250	26-32	3/8-1/2"	30-40
0.035	425-575	175-300	26-32	3/8-1/2"	30-40
0.045	250-350	200-310	26-32	3/8-1/2"	35-50
0.062	125-200	250-330	27-33	1/2"-5/8"	35-50

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit (cfh)

Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	75Ar/25He
0.035	150-200	90-110	19-21	3/8-1/2"	35-45
0.045	175-225	100-140	22-24	3/8-1/2"	40-50

TYPICAL GTAW WELDING PROCEDURES; DCEN with EWTh-2 truncated conical tip

Filler Wire Size	Tungsten	Amps	Volts	Gas Cup Size	Argon (cfh)	Base thickness
1/16"	1/16"	80-150	12	1/2"	20	1/16-1/8"
3/32"	3/32"	150-250	12	3/4"	25	1/8- 3/16"
1/8"	1/8"	200-375	12	5/8"	30	1/4-1/2"

Procedures may vary with change in position, base metals, filler metals, equipment and other changes.

AWS CHEMISTRY REQUIREMENTS (%) & TYPICAL WELD METAL STRENGTHS;

Carbon	0.10 max	Tensile Strength (psi)	110,000
Manganese	0.50 max	Yield Strength (psi)	60,000
Iron	5.00 max	Elongation	30%
Phosphorus	0.020 max		
Sulphur	0.015 max	Niobium (or Cb) + Tantalum	3.15-4.15
Silicon	0.50 max	Cobalt max if specified	0.12
Copper	0.50 max	Chromium	20.0-23.0
Nickel + Co	58.0 min.	Titanium	0.40 max
Aluminum	0.40 max	Molybdenum	8.0-10.0

AVAILABLE SIZES: TN 625 = Spools of .020, .030, .035, .045, 1/16,
TN 625/ = Cut lengths of .030, .035, .040, .045, 1/16, 3/32, 1/8, 5/32
Other sizes available – please inquire

SPECIFICATIONS; ANSI/AWS A5.14 ERNiCrMo-3
ASME SFA 5.14 ERNiCrMo-3

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