WA. ALLOY CO.

WASHINGTON ALLOY'S Quality Management System is Certified to ***ISO 9001:2008*** *Cert # 05-R0925*

2594
Welding Wire and Rod

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

American Welding Society
Sustaining Company Member

GAWDA
GASES AND WELDING DISTRIBUTORS ASSOCIATION

ALLOY DESCRIPTION AND APPLICATION;

2594 is a super duplex stainless steel used for welding matching or similar alloys such as ASTM A890, UNS S31260(DP-3), S32750 (2507), S32760 J93380 (Zeron 100), S32550(Ferralium 255). Also found for welding UNS S32550, J93370, and J03372 when used without sulfurous and sulfuric service conditions. It may also be used to weld carbon and low alloy steels to duplex as well as root runs on UNS S32205 & J92250. Interpass temperature 300° F max and heat input of 10-30 kJ/in.; Heat Input = Voltage x Amperage x 6 ⁄ Travel Speed (inch/Minute) x 100. Weld metal should have very good resistance to stress corrosion cracking and pitting with an austenite & 45-55 % ferrite matrix.

TYPICAL GMAW WELDING PROCEDURES; DCEP (Shielding gas = Ar+15-30%He+1-3%CO_2)

	Wire Diameter	Wire Speed (ipm)	Amps	Volts	Electrical Stick-out	Tri-mix (cfh)
	0.023	180-400	30-85	14-19	3/8-1/2”	20-25
	0.030	150-350	45-125	15-20	3/8-1/2”	20-25
	0.035	120-330	60-150	16-22	3/8-1/2”	20-30
	0.045	100-280	90-210	17-22	3/8-1/2”	25-30
Spray	*0.030*	*280-600*	*160-220*	*24-28*	*3/8-1/2”*	*(1)25-35*
	0.035	*250-470*	*170-295*	*23-29*	*1/2-3/4”*	*(1)25-35*
	0.045	*200-385*	*195-360*	*24-30*	*1/2-3/4”*	*(1)30-35*
	1/16”	*110-200*	*210-380*	*25-31*	*1/2-3/4”*	*(1)35-40*

(1) 98%Ar 2%O_2

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	10-12	3/8”	20	1/16-1/8”
3/32”	3/32”	150-250	15-18	3/8”	20	1/8- 3/16”
1/8”	1/8”	200-375	16-20	1/2”	25	1/4-1/2”

Addition of up to 2% nitrogen to the shielding gas may be advantageous when tig welding

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

TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES

	AWS Spec.		AWS Spec.
Carbon	0.03 max	Tensile Strength (psi)	110,000 min
Manganese	2.5 max	Elongation	15 % min
Silicon	1.0 max	Pitting Resistance Equivalent Number (PRE_N)	>40
Molybdenum	2.5-4.5	Tungsten	1.0 max
Nickel	8.0-10.5	Phosphorus	0.03 max
Chromium	24.0-27.0	Sulfur	0.02 max
Copper	1.5 max	Nitrogen	0.20-0.30

AVAILABLE SIZES: TS 2594= Spools of 1/16
TT 2594 = Cut lengths of 1/16, 3/32, 1/8
Other sizes available – please inquire

SPECIFICATIONS; **ANSI/AWS** A5.9 ER2594 **, ISO 14343A** 25 9 4 N L
ASME SFA 5.9 ER2594

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