WA. ALLOY CO.

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

312
Welding Wire and Rod

Arc-Zone.com

ALLOY DESCRIPTION AND APPLICATION;

Washington Alloy 312 gives a two-phase stainless steel weld deposit with about 30% austenite and ferrite matrix. Properties are highly resistant to weld metal cracking and fissures while yielding high strengths and good wear/corrosion resistance. 312 is a good choice for welding carbon steels to stainless, tool steels and other difficult to weld steels.

(Tri-mix gas = 90%He+7.5%Ar+2.5%CO_2)

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit

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

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

Some base metals may require preheat – 312 will not respond to heat-treatment

TYPICAL WIRE CHEMISTRY (%) & WELD METAL PROPERTIES

Carbon	0.14	Tensile Strength (psi)	109,000
Manganese	1.40	Yield Strength (psi)	79,000
Silicon	0.50	Elongation	25 %
Nickel	9.00	Hardness Rockwell B	93-103
Chromium	29.90		

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AVAILABLE SIZES: TS 312= Spools of 020, 030, 035, 045, 1/16, 1/8
TT 312 = Cut lengths of 020, 025, 030, 035, 045, 1/16, 3/32, 1/8, 5/32

SPECIFICATIONS; **ANSI/AWS** A5.9 ER312
ASME SFA 5.9 ER312 F-6

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