WA. ALLOY CO.

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

USA 80S-D2 Welding Wire and Rod

American Welding Society Sustaining Company Member

GAWDA GASES AND WELDING DISTRIBUTORS ASSOCIATION

ALLOY DESCRIPTION AND APPLICATION;

80S-D2 is a low alloy designed to produce high strengths on a wide range of base metals such as problem steels containing high sulfur to the basic carbon and low alloy Cr-Mo base metals. Its silicon level with molybdenum and manganese gives you excellent arc stability, low spatter, yielding a flat bead with excellent impact values and high ductile tensile strengths in the 100,000 psi range. 80S-D2 produces X-ray quality and porosity free welds even over poor cleaned base metals – widely use out of position .

TYPICAL GMAW WELDING PROCEDURES; DCEP Short Circuit *(1) 98Ar/2% O2*

	Wire Diameter	Wire Speed (ipm)	Amps	Volts	Travel speed (ipm)	CO_2 (cfh)
	0.023	80-350	30-85	14-19	10-15	20-25
	0.030	110-340	40-130	15-20	12-24	20-25
	0.035	100-520	60-235	16-25	11-40	20-30
	0.045	70-270	90-290	18-23	12-22	25-35
Spray	*0.035*	*320-600*	*160-300*	*23-26*	*11-22*	*(1) 25-35*
	0.045	*170-550*	*170-375*	*23-29*	*12-21*	*(1) 25-35*
	1/16"	*175-350*	*275-475*	*25-31*	*9-19*	*(1) 25-35*

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"	100-160	12	3/8"	20	1/16-3/32"
1/16-3/32"	3/32"	120-250	12	3/8"	20	1/8- 3/16"
1/8"	1/8"	150-300	12	1/2"	25	1/4-1/2"

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

TYPICAL WIRE CHEMISTRY (%) AND WELD METAL PROPERTIES; 100%CO_2

	AWS Spec.	80S-D2		AWS Spec	Typical
Carbon	0.07-0.12	0.080	Tensile Strength (psi)	80,000 min.	99,000
Manganese	1.60-2.10	1.95	Yield Strength (psi)	68,000 min.	84,000
Silicon	0.50-0.80	0.60	Elongation in 2"	17% min.	22%
Phosphorus	0.025 max	0.012	Charpy V-notch at -20°F	20 ft·lbs min.	30 ft·lbs
Sulfur	0.025 max	0.012	Reduction of area	n/a	55%
Nickel	0.15 max	0.020			
Molybdenum	0.40-0.60	0.50			
Copper	0.50 max	0.10			

AVAILABLE SIZES: TC = Spools and rods of .030, .035, .045, 1/16,
TT = Cut lengths of .025, .030, .035, .045, 1/16, 3/32, 1/8, 5/32, 3/16

SPECIFICATIONS; **ANSI/AWS** A5.28 ER 80S-D2
ASME SFA 5.28 ER 80S-D2 ; A-2, F-6

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