

Description:

ER80S-D2 is designed to give high strength welds on most high sulfur bearing (free-machining) steels or medium carbon steels. XTRweld 80S-D2 contains additional amounts of manganese and silicon, which when alloyed with 0.50% molybdenum, produce weld deposits which have a higher ductility, excellent impact values and high tensile strengths of approximately 95,000+ psi (XTRweld 80S-D2 can be specified to 90S-D2 (90,000 tensile) if a Ar/1-5 O2 gas mix is used and meets AWS A5.28 chemical requirements).

Typical Applications:

XTR 80S-D2 commonly used on low carbon and low alloy steels such as AISI 4130 where tensile strengths provided by plain carbon steel wires are inadequate. Well balanced, the silicon content gives this wire superior arc stability, a low spatter level and a flat bead with excellent appearance. XTR 80S-D2 also exhibits excellent out of position characteristics with the short circuiting and pulsed arc processes.

Chemistry:

	Typical	AWS Spec. Single values are max.
Carbon (C)	0.095	0.0712
Manganese (Mn)	1.85	1.6-2.1
Silicon (Si)	0.70	0.5080
Phosphorus (P)	0.01	0.025
Sulfur (S)	0.010	0.025
Nickel (Ni)	0.051	0.15
Molybdenum (Mo)	0.48	0.4060
Copper (Cu)	0.20	0.50



Mechanical Properties: (As Welded GMAW 100% CO2)

	Typical	AWS Spec. Single values are min.
Tensile Strength	99,500	80,000 psi
Yield Strength	85,100	68,000 psi
Elongation in 2" (%)	22	17
Charpy V-Notch	30	20 ftl•bf @ -20°F

Welding Positions:

All

Operating Parameters: MIG/MAG (GMAW), DCEP DC+

Short Circuit using 100% CO2 or Mix 75 Ar, 25% CO2 Shielding Gas

CO2 shielding gas will give deeper penetration at faster welding speeds than most argon mixtures. Adding Argon gas will result in a smoother bead appearance and less spatter. For "Spray Transfer" or Spray Arc, typically a high flow of 95%+ Ar, O2 mixture is used with much higher settings in amperage, voltage, and wire feed speed, with more stickout.

Diameter	Amperage	Voltage	Speed (IPM)	Stickout (In.)	Flow Rate (CFH)
0.030 (.8mm)	40-130	15-20	150-380	3/8 – 1/2	20-25
0.035 (.9mm)	60-195	16-22	150-330		20-30
0.045 (1.14mm)	80-260	17-22	100-230		25-35

Operating Parameters: TIG (GTAW), DCEN DC-

Shielding gas use 100% Argon Shielding Gas

Argon, Helium mixtures preferred for greater penetration on thicker sections							
Diameter	Amperage	Voltage	Tungsten Size	Flow Rate (CFH)	2% Thoriated		
0.045 (1.14mm)	70-110	13-16	0.040 – 1/16"	20 - 30	2% Ceriated 2% Lanthanum or Rare Earth Tungsten		
1/16 (1.6mm)	90-140	14-16	1/16 – 3/32"				
3/32 (2.4mm)	130-190	14-20	1/16 – 3/32"				
1/8 (3.2mm)	180-250	16-21	3/32 – 1/8"	25 - 35	Electrodes are		
5/32 (4.0mm)	230-350	17-22	3/32 – 1/8"	25 - 35	preferred		



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