



XTR 70S-6

AWS A5.18 ER70S-6

Description:

ER70S-6 is the most used copper coated steel welding wire, this is because of its versatility and ability to be welded in single or multi-pass welding applications. Commonly referred to as just "S-6", it is easy to weld with, boasting a very high combination of deoxidizers (Manganese and Silicon) allowing it to be used in almost every weld shop. Excellent puddle fluidity and wetting action with little post weld work required.

Typical Applications:

XTR ER70S-6 is well suited for many applications, commonly root pass pipe welding, butt, and fillet welding of sheet and plate in a variety of thickness's as well as many other carbon steel repair and fabrication.

Chemistry:

	Typical	AWS Spec. Single values are max.
Carbon (C)	0.065	0.06-0.15
Manganese (Mn)	1.450	1.40-1.85
Silicon (Si)	0.850	0.80-1.15
Phosphorus (P)	0.015	0.025
Sulfur (S)	0.007	0.035
Nickel (Ni)	0.010	0.150
Chromium (Cr)	0.015	0.150
Molybdenum (Mo)	0.016	0.150
Vanadium (V)	0.003	0.030
Copper (Cu)	0.120	0.500



Mechanical Properties: (As Welded GMAW 100% CO₂)

	Typical	AWS Spec. Single values are min.
Tensile Strength	89,500	70,000 psi
Yield Strength	75,100	58,000 psi
Elongation in 2" (%)	29.5	22
Charpy V-Notch	57-65	20 ft-lbf @ -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)
0.023 (.6mm)	30-85	14-19	110-380	3/8 – 1/2	15-20
0.030 (.8mm)	40-130	15-20	150-380		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 2% Ceriated 2% Lanthanum or Rare Earth Tungsten Electrodes are preferred
0.045 (1.14mm)	70-110	13-16	0.040 – 1/16"	20 - 30	
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	
5/32 (4.0mm)	230-350	17-22	3/32 – 1/8"	25 - 35	



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SCAN for SDS