



# XTR 70S-3

AWS A5.18 ER70S-3

## Description:

ER70S-3 is a copper coated, semi-killed steel intended for welding single and multi-pass welds. It provides sufficient deoxidation (Silicon and Manganese) which sufficiently allows welding over light mill scale.

## Typical Applications:

XTR ER70S-3 is well suited for welding most pipe, pressure vessels, steel buildings, and sheet steel. The sheet steel applications will vary and include ventilation ductwork, air conditioner compressors and frames, steel furniture, and many others. Care should be taken to avoid welding steel with excess oil, mill scale, or other contaminants.

## Chemistry:

	Typical	AWS Spec.
Carbon (C)	0.090	0.006-0.15
Manganese (Mn)	1.300	0.90-1.40
Silicon (Si)	0.650	0.45-0.75
Phosphorus (P)	0.018	0.025
Sulfur (S)	0.015	0.035
Nickel (Ni)	0.010	0.150
Chromium (Cr)	0.020	0.150
Molybdenum (Mo)	0.010	0.150
Vanadium (V)	0.005	0.030
Copper (Cu)	0.190	0.500



## Mechanical Properties: (As Welded GMAW 100% CO2)

	Typical	AWS Spec.
Tensile Strength	76,000	70,000 psi
Yield Strength	63,000	58,000 psi
Elongation in 2" (%)	28.5	22
Charpy V-Notch	57-67	20 ftl•bf @ -20°F

## Welding Positions:

All

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

<b>Short Circuit using 100% CO2 or Mix 75 Ar, 25% CO2 Shielding Gas</b>					
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.					
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-

<b>Shielding gas use 100% Argon Shielding Gas</b>					
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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