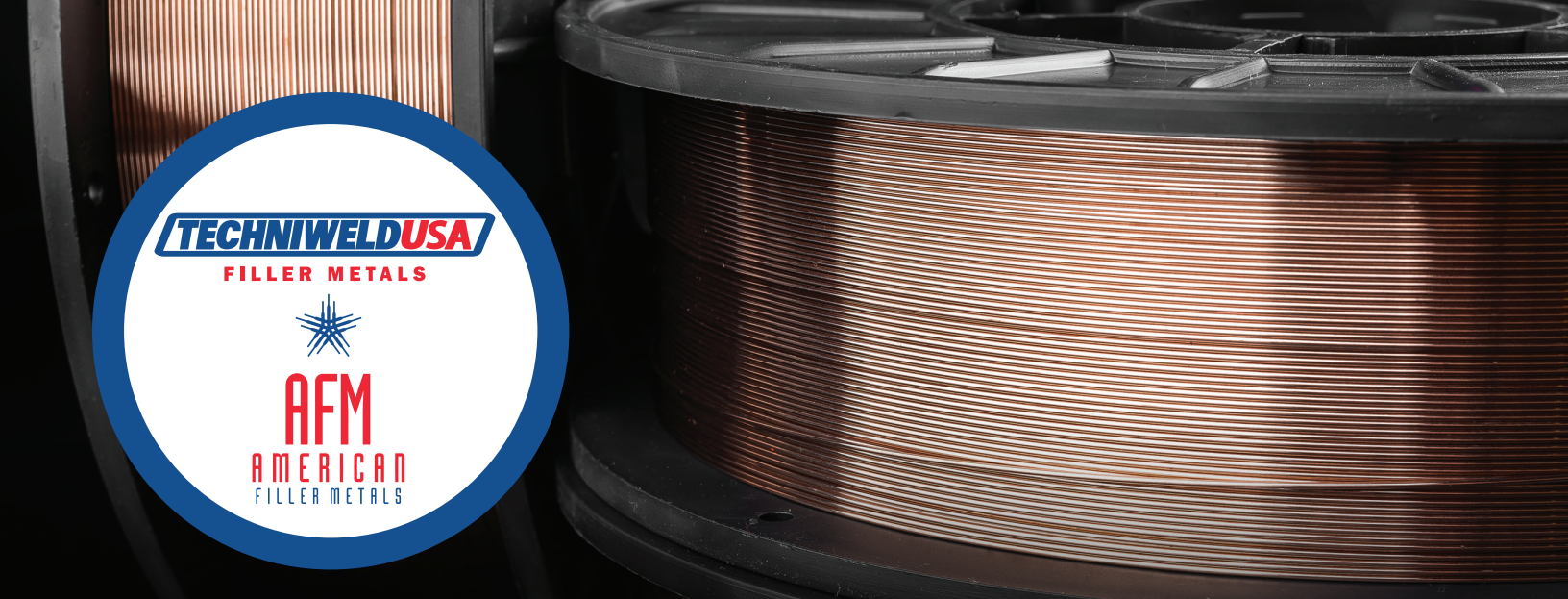

TECHNIWELDUSA FILLER METALS

AFM AMERICAN FILLER METALS

70S-3 Mild Steel Welding Wire [AWS A5.18, Class ER70S-3]

AWS A5.18, Class 70S-3 wire formulated with higher levels of manganese and silicon than other standard grades of MIG wire. This provides better tolerance to rust, scale, and other plate contaminants. It is particularly well-suited for spray transfer and high-speed applications where good wetting and appearance are important. This is a premium mild steel solid wire.

ER70S-3 SIZE AND PACKAGING OPTIONS

Package/size	.030	.035	.045	.052	1/16	3/32	1/8	5/32
2 lb Spool	✓	✓						
11 lb Spool	✓	✓						
33 lb Spool	✓	✓	✓					
44 lb Spool			✓					
550 lb Drum		✓	✓	✓				
1000 lb Drum			✓	✓				
36" Cut Length		✓	✓		✓	✓	✓	✓

ER70S-3 Mild and Low Alloy Steel Bare Wire

Application: Frame fabrication, automotive structures, farm implements, construction equipment, pressure vessels, pipe fabrication, railcar construction and other general fabrication and repair. Used in high-speed robotic and automatic welding applications and semi-automatic applications. (For Mig welding use Carbon Dioxide or Argon + Co2 or Argon + 2% Oxygen as shielding gases. For Tig welding use 100% Argon.)

Specifications: Conforms to AWS A5.18

Classification: ER70S-3

AWS CHEMICAL COMPOSITION REQUIREMENTS

Elements	C	Cr (max)	Ni (max)	Mn	Si	P (max)	S (max)	Cu (max)	Mo (max)	V (max)
Typical %	0.06-.15	0.15	0.15	0.9-1.4	0.45-0.75	0.025	0.035	0.5	0.15	0.03

DEPOSITED CHEMICAL COMPOSITION % (TYPICAL)

C	Mn	P	S	Si	Cu
0.07	1.19	0.012	0.022	0.52	0.40

MECHANICAL PROPERTIES

	Tensile Strength	Yield Strength	Elongation in 2"
Typical %	75,500 psi	61,500 psi	23 %

DEPOSITED CHARPY-V-NOTCH IMPACT PROPERTIES %

35 ft. lbs. (at 0°F)

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Typical Operating Procedures

Diameter, Polarity Shielding Gas	CTWD[1] mm (in)	Wire Feed Speed m/min (in/min)	Voltage (Volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.030 in (0.8 mm), DC+					
Short Circuit Transfer 100% CO_2	9-12 (3/8-1/2)	1.9 (75) 3.8 (150) 7.6 (300)	17 18 22	35 70 130	0.4 (0.9) 0.8 (1.8) 1.6 (3.6)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 100% CO_2 [2]	9-12 (3/8-1/2)	2.5 (100) 3.8 (150) 6.4 (250)	18 19 22	80 120 175	0.7 (1.6) 1.1 (2.4) 1.8 (4.0)
Spray Transfer 90% Ar/10% CO2	12-19 (1/2-3/4)	9.5 (375) 12.7 (500) 15.2 (600)	23 29 30	195 230 275	2.7 (6.0) 3.6 (8.0) 4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 100% CO_2 [2]	12-19 (1/2-3/4)	3.2 (125) 3.8 (150) 5.1 (200)	19 20 21	145 165 200	1.5 (3.4) 1.8 (4.0) 2.5 (5.4)
Spray Transfer 90% Ar/10% CO2	12-19 (1/2-3/4)	8.9 (350) 12.1 (475) 12.7 (500)	27 30 30	285 335 340	4.2 (9.2) 5.7 (12.5) 6.0 (13.2)
0.052 in (1.3 mm), DC+					
Spray Transfer 90% Ar/10% CO2	12-19 (1/2-3/4)	7.6 (300) 8.1 (320) 12.3 (485)	30 30 32	300 320 430	4.8 (10.6) 5.2 (11.5) 7.8 (17.1)
1/16 in (1.6 mm), DC+					
Spray Transfer 90% Ar/10% CO2	12-25 (1/2-1)	2.3 (210) 6.0 (235) 7.4 (290)	25 27 28	325 350 430	4.8 (10.7) 5.2 (12.0) 6.7 (14.8)

[1] CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.

[2] Procedures in these areas are procedures for short circuiting mode using 100% CO2. When using 75% Argon, 25% CO2 for short circuit transfer, reduce voltage by 1 to 2 volts.

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