

Spoolarc 86

Spoolarc 86 is a copper-coated solid wire containing high levels of manganese and silicon. Spoolarc 86 is suitable for many carbon steel welding applications using the MIG/Gas Metal Arc Welding (GMAW) process. The high levels of deoxidizers in Spoolarc 86 provide excellent tolerance of rust and mill scale. The high levels of manganese and silicon also provide excellent wetting action and a highly fluid weld puddle. Shielding gas choices for Spoolarc 86 in the GMAW mode are 100% carbon dioxide, argon/carbon dioxide mixtures, argon/oxygen mixtures, and other argon based mixed gas blends. Spoolarc 86 excels in HVAC duct work, heavy equipment fabrication, structural, and other general steel fabrication.

Classifications:	ASME SFA-A5.18: ER70S-6, AWS A5.18: ER70S-6 H4
Approvals:	ABS AWS A5.18: ER70S-6 H4, CWB CAN/CSA-ISO14341,B-G 49A 3C G6 (ER49S-6), CWB CSA W48, LR 3S, 3YS (H15), MIL-E-23765/1 MIL-70S-6
Industry:	Automotive, Mobile Equipment, Industrial and General Fabrication, Ship/Barge Building

Approvals are based on factory location. Please contact ESAB for more information.

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
90% Ar - 10% CO₂			
As Welded	503 MPa (73 ksi)	593 MPa (86 ksi)	29 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
90% Ar - 10% CO₂		
As Welded	-29 °C (-20 °F)	156 J (115 ft-lb)
As Welded	-40 °C (-40 °F)	123 J (91 ft-lb)
As Welded	-45 °C (-50 °F)	130 J (96 ft-lb)

Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	Cu
0.08	1.51	0.85	0.01	0.008	0.01	0.02	0.01	0.11

Deposition Data

Diameter	Current	Deposition Rate	Efficiency (%)
0.8 mm (.030 in.)	100 A	1.13 kg/h (2.5 lb/h)	93 %
0.8 mm (.030 in.)	150 A	1.77 kg/h (3.9 lb/h)	93 %
0.8 mm (.030 in.)	200 A	2.95 kg/h (6.5 lb/h)	93 %
0.8 mm (.030 in.)	75 A	0.82 kg/h (1.8 lb/h)	93 %
100% CO₂			
0.9 mm (.035 in.)	100 A	1.18 kg/h (2.6 lb/h)	93 %
0.9 mm (.035 in.)	150 A	1.81 kg/h (4.0 lb/h)	93 %
0.9 mm (.035 in.)	200 A	2.68 kg/h (5.9 lb/h)	93 %
0.9 mm (.035 in.)	250 A	3.90 kg/h (8.6 lb/h)	93 %

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Deposition Data

Diameter	Current	Deposition Rate	Efficiency (%)
0.9 mm (.035 in.)	80 A	0.91 kg/h (2.0 lb/h)	93 %
1.2 mm (.045 in.)	100 A	0.86 kg/h (1.9 lb/h)	93 %
1.2 mm (.045 in.)	125 A	1.22 kg/h (2.7 lb/h)	93 %
1.2 mm (.045 in.)	150 A	1.54 kg/h (3.4 lb/h)	93 %
1.2 mm (.045 in.)	200 A	2.40 kg/h (5.3 lb/h)	93 %
1.2 mm (.045 in.)	250 A	3.36 kg/h (7.4 lb/h)	93 %
1.2 mm (.045 in.)	300 A	4.40 kg/h (9.7 lb/h)	93 %
1.2 mm (.045 in.)	350 A	5.67 kg/h (12.5 lb/h)	93 %
1.6 mm (1/16 in.)	250 A	2.81 kg/h (6.2 lb/h)	93 %
1.6 mm (1/16 in.)	275 A	3.31 kg/h (7.3 lb/h)	93 %
1.6 mm (1/16 in.)	300 A	3.86 kg/h (8.5 lb/h)	93 %
1.6 mm (1/16 in.)	350 A	4.85 kg/h (10.7 lb/h)	93 %
1.6 mm (1/16 in.)	400 A	6.03 kg/h (13.3 lb/h)	93 %
1.6 mm (1/16 in.)	450 A	7.48 kg/h (16.5 lb/h)	93 %
75% Ar - 25% CO2			
0.8 mm (.030 in.)	100 A	1.18 kg/h (2.6 lb/h)	96 %
0.8 mm (.030 in.)	150 A	1.81 kg/h (4.0 lb/h)	96 %
0.8 mm (.030 in.)	200 A	3.04 kg/h (6.7 lb/h)	96 %
0.8 mm (.030 in.)	75 A	0.86 kg/h (1.9 lb/h)	96 %
0.9 mm (.035 in.)	100 A	1.22 kg/h (2.7 lb/h)	96 %
0.9 mm (.035 in.)	150 A	1.86 kg/h (4.1 lb/h)	96 %
0.9 mm (.035 in.)	200 A	2.72 kg/h (6.0 lb/h)	96 %
0.9 mm (.035 in.)	250 A	3.09 kg/h (8.8 lb/h)	96 %
0.9 mm (.035 in.)	80 A	0.95 kg/h (2.1 lb/h)	96 %
1.2 mm (.045 in.)	100 A	0.91 kg/h (2.0 lb/h)	96 %
1.2 mm (.045 in.)	125 A	1.27 kg/h (2.8 lb/h)	96 %
1.2 mm (.045 in.)	150 A	1.59 kg/h (3.5 lb/h)	96 %
1.2 mm (.045 in.)	200 A	2.49 kg/h (5.5 lb/h)	96 %
1.2 mm (.045 in.)	250 A	3.45 kg/h (7.6 lb/h)	96 %
1.2 mm (.045 in.)	300 A	4.53 kg/h (10.0 lb/h)	96 %
1.2 mm (.045 in.)	350 A	5.85 kg/h (12.9 lb/h)	96 %
1.6 mm (1/16 in.)	250 A	2.90 kg/h (6.4 lb/h)	96 %
1.6 mm (1/16 in.)	275 A	3.45 kg/h (7.6 lb/h)	96 %
1.6 mm (1/16 in.)	300 A	3.99 kg/h (8.8 lb/h)	96 %
1.6 mm (1/16 in.)	350 A	6.21 kg/h (11.0 lb/h)	96 %
1.6 mm (1/16 in.)	400 A	6.21 kg/h (13.7 lb/h)	96 %

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Deposition Data			
Diameter	Current	Deposition Rate	Efficiency (%)
1.6 mm (1/16 in.)	450 A	7.76 kg/h (17.1 lb/h)	96 %
92% Ar - 8% CO₂			
0.8 mm (.030 in.)	100 A	1.18 kg/h (2.6 lb/h)	98 %
0.8 mm (.030 in.)	150 A	1.86 kg/h (4.1 lb/h)	98 %
0.8 mm (.030 in.)	200 A	3.08 kg/h (6.8 lb/h)	98 %
0.8 mm (.030 in.)	75 A	0.91 kg/h (2.0 lb/h)	98 %
0.9 mm (.035 in.)	100 A	1.22 kg/h (2.7 lb/h)	98 %
0.9 mm (.035 in.)	150 A	1.90 kg/h (4.2 lb/h)	98 %
0.9 mm (.035 in.)	200 A	2.81 kg/h (6.2 lb/h)	98 %
0.9 mm (.035 in.)	250 A	4.08 kg/h (9.0 lb/h)	98 %
0.9 mm (.035 in.)	80 A	1.00 kg/h (2.2 lb/h)	98 %
1.2 mm (.045 in.)	100 A	0.95 kg/h (2.1 lb/h)	98 %
1.2 mm (.045 in.)	125 A	1.27 kg/h (2.8 lb/h)	98 %
1.2 mm (.045 in.)	150 A	1.63 kg/h (3.6 lb/h)	98 %
1.2 mm (.045 in.)	200 A	2.54 kg/h (5.6 lb/h)	98 %
1.2 mm (.045 in.)	250 A	3.58 kg/h (7.8 lb/h)	98 %
1.2 mm (.045 in.)	300 A	4.63 kg/h (10.2 lb/h)	98 %
1.2 mm (.045 in.)	350 A	5.99 kg/h (13.2 lb/h)	98 %
1.6 mm (1/16 in.)	250 A	2.95 kg/h (6.5 lb/h)	98 %
1.6 mm (1/16 in.)	275 A	3.49 kg/h (7.7 lb/h)	98 %
1.6 mm (1/16 in.)	300 A	4.08 kg/h (9.0 lb/h)	98 %
1.6 mm (1/16 in.)	350 A	5.13 kg/h (11.3 lb/h)	98 %
1.6 mm (1/16 in.)	400 A	6.35 kg/h (14.0 lb/h)	98 %
1.6 mm (1/16 in.)	450 A	7.89 kg/h (17.4 lb/h)	98 %