

Spoolarc 29S

Spoolarc 29S is a general purpose copper-coated solid wire suitable for many carbon steel MIG welding applications. Spoolarc 29S contains moderate amounts of manganese and silicon to provide sufficient deoxidation over light mill scale. Shielding gas choices for Spoolarc 29S in the GMAW mode are 100% carbon dioxide, argon/carbon dioxide mixtures, argon/oxygen mixtures, and other argon based mixed gas blends. Spoolarc 29S is used in a wide variety of applications including heavy equipment, automotive parts, railcars, agricultural equipment, and sheet metal welding.

Classifications:	AWS A5.18: ER70S-3
Approvals:	ABS 3SA, 3YSA, CWB CSA W48, CWB CAN/CSA-ISO14341, B-G 49A 2C G3 (ER49S-3)
Industry or Segmentation:	Mobile Equipment, Industrial and General Fabrication, Civil Construction, Automotive

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

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
100% CO₂			
As Welded	420 MPa (61 ksi)	505 MPa (73 ksi)	32 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
100% CO₂		
As Welded	-18 °C (0 °F)	129 J (95 ft-lb)

Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
0.09	1.18	0.54	0.007	0.015	0.04	0.04	0.01	0.004	0.04

SPOOLARC RECOMMENDED WELDING PARAMETERS

Recommended Welding Parameters					Optimum		
Diameter, mm (in.)	Length/Wt., m/kg (in./lb)	Amps, A	Volts, V	Wire Feed Speed, cm/min (in./min)	Amps, A	Volts, V	Wire Feed Speed, cm/min (in./min)
Short Arc Transfer							
0.6 (.023)	476 (8505)	45-90	14-16	381-965 (150-380)	70	15	762 (300)
0.8 (.030)	280 (5000)	60-140	14-16	381-889 (150-350)	100	15	559 (220)
0.9 (.035)	206 (3670)	90-160	15-19	457-762 (180-300)	130	17	635 (250)
1.2 (.045)	124 (2220)	130-200	17-19	318-508 (125-200)	160	18	381 (150)
1.4 (.052)	93 (1665)	150-200	17-20	343-483 (135-190)	160	18	356 (140)
Spray Transfer							
0.6 (.023)	476 (8505)	100-125	23-25	1016-1575 (400-620)	110	23	1143 (450)
0.8 (.030)	280 (5000)	160-200	24-26	1270-1651 (500-650)	180	25	1321 (520)
0.9 (.035)	206 (3670)	180-230	25-27	1016-1397 (400-550)	200	26	1219 (480)
1.2 (.045)	124 (2220)	260-340	25-30	762-1270 (300-500)	300	27	889 (350)
1.4 (.052)	93 (1665)	275-400	26-33	673-991 (265-390)	325	28	787 (310)
1.6 (1/16)	64 (1150)	290-400	26-36	457-711 (180-280)	340	27	508 (200)

Note: DCEP (Electrode Positive); Flow rates of 25-45 CFH is required.

SPOOLARC DEPOSITION AND EFFICIENCY DATA

Deposition Data				
Diameter, mm (in.)	Amps, A	Deposition Rate, kg/h (lb/h)		
		98% Ar - 2% O2 *98% Efficiency	75% Ar - 25% CO2 *96% Efficiency	100% CO2 *93% Efficiency
0.8 (.030)	75	0.91 (2.0)	0.86 (1.9)	0.82 (1.8)
	100	1.18 (2.6)	1.18 (2.6)	1.13 (2.5)
	150	1.86 (4.1)	1.81 (4.0)	1.77 (3.9)
	200	3.08 (6.8)	3.04 (6.7)	2.95 (6.5)
0.9 (.035)	80	1.00 (2.2)	0.95 (2.1)	0.91 (2.0)
	100	1.22 (2.7)	1.22 (2.7)	1.18 (2.6)
	150	1.90 (4.2)	1.86 (4.1)	1.81 (4.0)
	200	2.81 (6.2)	2.72 (6.0)	2.68 (5.9)
	250	4.08 (9.0)	3.99 (8.8)	3.90 (8.6)
1.2 (.045)	100	0.95 (2.1)	0.91 (2.0)	0.86 (1.9)
	125	1.27 (2.8)	1.27 (2.8)	1.22 (2.7)
	150	1.63 (3.6)	1.59 (3.5)	1.54 (3.4)
	200	2.54 (5.6)	2.49 (5.5)	2.40 (5.3)
	250	3.58 (7.8)	3.45 (7.6)	3.36 (7.4)
	300	4.63 (10.2)	4.53 (10.0)	4.40 (9.7)
	350	5.99 (13.2)	5.85 (12.9)	5.67 (12.5)
1.6 (1/16)	250	2.92 (6.5)	2.90 (6.4)	2.81 (6.2)
	275	3.49 (7.7)	3.45 (7.6)	3.31 (7.3)
	300	4.08 (9.0)	3.99 (8.8)	3.86 (8.5)
	350	5.13 (11.3)	4.99 (11.0)	4.85 (10.7)
	400	6.35 (14.0)	6.21 (13.7)	6.03 (13.3)
	450	7.89 (17.4)	7.76 (17.1)	7.48 (16.5)

*Use this figure as the deposition efficiency in the weld metal cost per lb. (kg) calculations.