

Spoolarc 75

Spoolarc 75 is a copper-coated 1% nickel solid wire for carbon steel and low alloy welding applications using either the MIG/Gas Metal Arc Welding (GMAW). Spoolarc 75 produces a deposit that meets the weathering requirements of AWS D1.1 and D1.5 and is designed to weld weathering steels and/or where improved low temperature impact toughness is specified. Shielding gas choices for Spoolarc 75 are Ar/CO₂ mixtures containing a minimum of 75% Ar or the 98% Ar/2% O₂. Spoolarc 75 is used for bridge and structural welding.

Specifications

Classifications	ASME SFA 5.28 ASME SFA 5.23 AWS A5.28 : ER80S-Ni1 AWS A5.23 : ENi1K
Industry	Mobile Equipment Ship/Barge Building Industrial and General Fabrication Bridge Construction

Tensile Properties

Testing Condition	Yield Strength	Tensile Strength	Elongation
98% Ar - 2% O₂			
As Welded	485 MPa (70 ksi)	560 MPa (81 ksi)	31 %

Charpy Testing

Testing Condition	Testing Temp	Impact Value
98% Ar - 2% O₂		
As Welded	-45 °C (-50 °F)	135 J (100 ft-lb)

Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	Cu
0.08	0.94	0.49	0.002	0.01	0.98	0.04	0.01	0.08

Deposition Data

Diameter	Amps	Efficiency (Per)	Deposition Rate
3.2 mm (1/8 in.)	400 A	99 %	5 kg/h (11.0 lbs/h)
3.2 mm (1/8 in.)	500 A	99 %	6.6 kg/h (14.5 lbs/h)
3.2 mm (1/8 in.)	600 A	99 %	8.2 kg/h (18.0 lbs/h)
3.2 mm (1/8 in.)	700 A	99 %	9.6 kg/h (21.2 lbs/h)
2.4 mm (3/32 in.)	400 A	99 %	6 kg/h (13.2 lbs/h)
2.4 mm (3/32 in.)	500 A	99 %	7.7 kg/h (17.0 lbs/h)
2.4 mm (3/32 in.)	600 A	99 %	10 kg/h (22.0 lbs/h)
4.0 mm (5/32 in.)	500 A	99 %	5.7 kg/h (12.5 lbs/h)
4.0 mm (5/32 in.)	600 A	99 %	7.3 kg/h (16.0 lbs/h)
4.0 mm (5/32 in.)	700 A	99 %	8.8 kg/h (19.5 lbs/h)
4.0 mm (5/32 in.)	800 A	99 %	10.4 kg/h (23.0 lbs/h)
4.0 mm (5/32 in.)	900 A	99 %	11.8 kg/h (26.0 lbs/h)

Welding Parameters

Amps	Wire Diameter	Volts	Wire Feed Speed
Short Arc Transfer			
45-90 A	0.6 mm (.023 in.)	14-16 V	381-965 cm/min (150-380 in./min)
70 A	0.6 mm (.023 in.)	15 V	762 cm/min (300 in./min)

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Welding_Parameters

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

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