

## Spoolarc 65

Spoolarc 65 is a triple deoxidized (Aluminum, Titanium, Zirconium) welding wire designed for welding over rust and mill scale. The less fluid weld puddle of Spoolarc 65 makes it easy to control when used out of position. Spoolarc 65 is the preferred wire for all position welding of small diameter pipe. It is available in forms suitable for MIG and TIG welding.

<b>Classifications</b>	AWS A5.18 : ER70S-2 H4
<b>Industry</b>	Pipeline Power Generation Ship/Barge Building Military Applications

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
<b>98% Ar - 2% O2</b>			
As Welded	480 MPa (70 ksi)	565 MPa (82 ksi)	26 %
<b>100% Ar</b>			
As Welded	460 MPa (67 ksi)	545 MPa (79 ksi)	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>100% Ar</b>		
As Welded	-29 °C (-20 °F)	47 J (35 ft-lb)
<b>98% Ar - 2% O2</b>		
As Welded	-29 °C (-20 °F)	61 J (45 ft-lb)

### Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	V	Al
0.06	1.14	0.50	0.006	0.004	0.03	0.06	0.01	0.01	0.08

### Typical Wire Composition %

Cu	Ti	Zr
0.10	0.10	0.04

### Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
0.9 mm (.035 in.)	180 A	25 V	1016 cm/min (400 in./min)	2.9 kg/h (6.3 lb/h)
0.9 mm (.035 in.)	197 A	26 V	1143 cm/min (450 in./min)	3.2 kg/h (7.1 lb/h)
0.9 mm (.035 in.)	213 A	26 V	1270 cm/min (500 in./min)	3.6 kg/h (7.9 lb/h)
0.9 mm (.035 in.)	230 A	27 V	1397 cm/min (550 in./min)	4.0 kg/h (8.7 lb/h)
1.2 mm (.045 in.)	260 A	25 V	762 cm/min (300 in./min)	3.6 kg/h (7.9 lb/h)
1.2 mm (.045 in.)	280 A	26 V	889 cm/min (350 in./min)	4.2 kg/h (9.2 lb/h)
1.2 mm (.045 in.)	300 A	28 V	1016 cm/min (400 in./min)	4.8 kg/h (10.5 lb/h)
1.2 mm (.045 in.)	320 A	29 V	1143 cm/min (450 in./min)	5.4 kg/h (11.8 lb/h)
1.2 mm (.045 in.)	340 A	30 V	1270 cm/min (500 in./min)	6.0 kg/h (13.1 lb/h)
1.6 mm (1/16 in.)	290 A	26 V	457 cm/min (180 in./min)	4.1 kg/h (9.1 lb/h)
1.6 mm (1/16 in.)	310 A	28 V	508 cm/min (200 in./min)	4.6 kg/h (10.1 lb/h)
1.6 mm (1/16 in.)	340 A	31 V	584 cm/min (230 in./min)	5.3 kg/h (11.6 lb/h)

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Deposition Data				
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
1.6 mm (1/16 in.)	370 A	34 V	660 cm/min (260 in./min)	6.0 kg/h (13.2 lb/h)
1.6 mm (1/16 in.)	390 A	36 V	711 cm/min (280 in./min)	6.4 kg/h (14.2 lb/h)
0.9 mm (.035 in.)	90 A	15 V	457 cm/min (180 in./min)	1.2 kg/h (2.7 lb/h)
0.9 mm (.035 in.)	113 A	16 V	559 cm/min (220 in./min)	1.5 kg/h (3.3 lb/h)
0.9 mm (.035 in.)	137 A	18 V	660 cm/min (260 in./min)	1.8 kg/h (4.0 lb/h)
0.9 mm (.035 in.)	160 A	19 V	762 cm/min (300 in./min)	2.1 kg/h (4.6 lb/h)
1.2 mm (.045 in.)	130 A	17 V	318 cm/min (125 in./min)	1.4 kg/h (3.1 lb/h)
1.2 mm (.045 in.)	163 A	18 V	406 cm/min (160 in./min)	1.8 kg/h (4.0 lb/h)
1.2 mm (.045 in.)	200 A	19 V	508 cm/min (200 in./min)	2.3 kg/h (5.0 lb/h)

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

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