

## Spoolarc 95

Spoolarc 95 is Military grade high strength wire used to weld HY-80 steels. Applications for Spoolarc 95 include military tanks, ships and submarines.

<b>Classifications</b>	AWS A5.28 : ER100S-1
<b>Approvals</b>	MIL-E-100S-1/MIL-E-23765/2
<b>Industry</b>	Ship/Barge Building Military Applications Mining Heavy Fabrication

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

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
As Welded	655 MPa (95 ksi)	725 MPa (105 ksi)	23 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO2</b>		
As Welded	-51 °C (-60 °F)	88 J (65 ft-lb)
As Welded	-18 °C (0 °F)	126 J (93 ft-lb)

### Typical Wire Composition %

C	Mn	Si	S	P	Ni	Cr	Mo	V
0.06	1.35	0.33	0.008	0.004	1.75	0.1	0.34	0.001

### Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
<b>75% Ar - 25% CO2</b>				
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)
0.9 mm (.035 in.)	90 A	15 V	457 cm/min (180 in./min)	1.2 kg/h (2.7 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)
1.4 mm (.052 in.)	150 A	17 V	343 cm/min (135 in./min)	2.1 kg/h (4.5 lb/h)
1.4 mm (.052 in.)	173 A	18 V	406 cm/min (160 in./min)	2.4 kg/h (5.4 lb/h)
1.4 mm (.052 in.)	200 A	20 V	483 cm/min (190 in./min)	2.9 kg/h (6.4 lb/h)
<b>98% Ar - 2% O2</b>				
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)

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Deposition Data				
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate
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)
1.4 mm (.052 in.)	275 A	26 V	673 cm/min (265 in./min)	4.2 kg/h (9.3 lb/h)
1.4 mm (.052 in.)	310 A	28 V	762 cm/min (300 in./min)	4.8 kg/h (10.5 lb/h)
1.4 mm (.052 in.)	360 A	31 V	889 cm/min (350 in./min)	5.6 kg/h (12.2 lb/h)
1.4 mm (.052 in.)	400 A	33 V	991 cm/min (390 in./min)	6.2 kg/h (13.6 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)
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)

Recommended Welding Parameters			
Wire Diameter	Condition	Condition	Condition
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)

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Recommended Welding Parameters			
Wire Diameter	Condition	Condition	Condition
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 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)