

SPOOLARC 120 AWS /ASME SFA 5.28: ER120S-1

Elite Series

FEATURES

Spoolarc 120 is designed for welding high strength quenched and tempered steels. Weld metal mechanical properties produce high tensile strengths, in excess of 120 ksi (825 MPa). Applications for Spoolarc 120 include military tanks, ships, submarines and other similar fabrication.

CLASSIFICATIONS AND APPROVALS

- AWS/ASME SFA 5.28: ER120S-1
- AWS/ASME SFA 5.23 EM4

WELDING PROCESS

- GMAW (MIG)
- GTAW (TIG)
- SAW (Sub Arc)

INDUSTRIES

- Mobile Machinery
- General Fabrication
- Shipbuilding

TYPICAL MECHANICAL PROPERTIES

As Welded GMAW 98% Ar / 2% O ₂	
Yield Strength	112 ksi, 775 MPa
Tensile Strength	123 ksi, 840 MPa
Elongation in 2"	19%

CHARPY V-NOTCH PROPERTIES

Testing Temperature -60°F (-51°C)	
As Welded GMAW 98% Ar / 2% O ₂	
75 ft-lb, 102 J	
Testing Temperature 0°F (-18°C)	
As Welded GMAW 98% Ar / 2% O ₂	
100 ft-lb, 136 J	

WELD METAL ANALYSIS

GMAW 98% Ar / 2% O ₂	
C	0.07%
Mn	1.3%
Si	0.35%
P	0.007%
S	0.008%
Cr	0.4%
Ni	2.6%
Mo	0.45%
Typical Wire Analysis	
C	0.05%
Mn	1.6%
Si	0.3%
P	0.005%
S	0.004%
Cr	0.3%
Ni	2.3%
Mo	0.5%

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DEPOSITION TABLE - Spray Transfer Welding Parameters

Diameter in (mm)	Amps	Volts	Wire Feed Speed ipm (cm/min)	Deposition Rate lb/hr (kg/hr)
.030 (0.8)	160	24	500 (1270)	5.8 (2.6)
	173	25	550 (1397)	6.4 (2.9)
	187	25	600 (1524)	7 (3.2)
	200	26	650 (1651)	7.6 (3.4)
.035 (0.9)	180	25	400 (1016)	6.3 (2.9)
	197	26	450 (1143)	7.1 (3.2)
	213	26	500 (1270)	7.9 (3.6)
	230	27	550 (1397)	8.7 (4)
.045 (1.2)	260	25	300 (762)	7.9 (3.6)
	280	26	350 (889)	9.2 (4.2)
	300	28	400 (1016)	10.5 (4.8)
	320	29	450 (1143)	11.8 (5.4)
.052 (1.3)	340	30	500 (1270)	13.1 (6)
	275	26	265 (673)	9.3 (4.2)
	310	28	300 (762)	10.5 (4.8)
	360	31	350 (889)	12.2 (5.6)
.062 (1.6)	400	33	390 (991)	13.6 (6.2)
	290	26	180 (457)	9.1 (4.1)
	310	28	200 (508)	10.1 (4.6)
	340	31	230 (584)	11.6 (5.3)
	370	34	260 (660)	13.2 (6)
	390	36	280 (711)	14.2 (6.4)

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DEPOSITION TABLE - Shortarc Transfer Welding Parameters

Diameter in (mm)	Amps	Volts	Wire Feed Speed ipm (cm/min)	Deposition Rate lb/hr (kg/hr)
.030 (0.8)	60	14	150 (381)	1.7 (0.8)
	80	15	200 (508)	2.2 (1)
	100	15	250 (635)	2.8 (1.3)
	120	16	300 (762)	3.3 (1.5)
	140	16	350 (889)	3.9 (1.8)
	144	16	350 (914)	4 (1.8)
.035 (0.9)	90	15	180 (457)	2.7 (1.2)
	113	16	220 (559)	3.3 (1.5)
	137	18	260 (660)	4 (1.8)
	160	19	300 (762)	4.6 (2.1)
.045 (1.2)	130	17	125 (318)	3.1 (1.4)
	163	18	160 (406)	4 (1.8)
	200	19	200 (508)	5 (2.3)
.052 (1.3)	150	17	135 (343)	4.5 (2.1)
	173	18	160 (406)	5.4 (2.4)
	200	20	190 (483)	6.4 (2.9)

PART NUMBER / PRODUCT INFORMATION

Part Number	Description	UPC
2118F25	120 CU 035X11#SP	662303521752
2112F25	120 CU 035X35#SP	662303518318
2112F27	120 CU 045X35#SP	662303512729
211UF67	120 CU 045X550#OMP 20 2/PLT	662303669157
2117F08	120 CU 1/16X36X25#CT F1	662303669058
2112F28	120 CU 1/16X35#SP	662303520380