

# MIG & TIG

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**GMAW/GTAW**  
CONSUMABLES

# Selection Guide

## MIG (GMAW) Solid Wire

Product Name & AWS Class	Key Features	Diameters Available in (mm)						
		0.025 (0.6)	0.030 (0.8)	0.035 (0.9)	0.040 (1.0)	0.045 (1.1)	0.052 (1.3)	1/16 (1.6)
<b>Mild Steel, Bare</b>								
SuperGlide® S3 (ER70S-3)	<ul style="list-style-type: none"> <li>Deoxidizers tolerate light mill scale</li> <li>Microguard® Ultra provides excellent feeding and arc stability</li> <li>Bare wire reduces copper fumes</li> </ul>			✓		✓		
SuperGlide® S6 (ER70S-6)	<ul style="list-style-type: none"> <li>Deoxidizers tolerate medium to heavy mill scale</li> <li>Microguard® Ultra provides excellent feeding and arc stability</li> <li>Bare wire reduces copper fumes</li> </ul>			✓		✓		
<b>Mild Steel, Copper Coated</b>		0.025 (0.6)	0.030 (0.8)	0.035 (0.9)	0.040 (1.0)	0.045 (1.1)	0.052 (1.3)	1/16 (1.6)
SuperArc® L-50 (ER70S-3 & EM13K)	<ul style="list-style-type: none"> <li>Moderate levels of manganese and silicon for deoxidization of light mill scale surfaces</li> <li>Superior feeding and arc stability</li> <li>Copper coated for long contact tip life</li> </ul>		✓	✓		✓	✓	✓
SuperArc® L-56 (ER70S-6 & EH11K)	<ul style="list-style-type: none"> <li>High levels of manganese and silicon deoxidizers tolerate medium to heavy mill scale surfaces</li> <li>Excellent toe-wetting provides optimal bead appearance</li> <li>Copper coated for long contact tip life</li> </ul>	✓	✓	✓	✓	✓	✓	✓
SuperArc® L-59 (ER70S-6)	<ul style="list-style-type: none"> <li>High deposition rates similar to metal-cored wire</li> <li>Minimal spatter</li> <li>Engineered alloy system enhances silicon island management</li> </ul>			✓	✓	✓	✓	✓
<b>Low Alloy, Copper Coated</b>		0.025 (0.6)	0.030 (0.8)	0.035 (0.9)	0.040 (1.0)	0.045 (1.1)	0.052 (1.3)	1/16 (1.6)
SuperArc® LA-75 (ER80S-Ni1 & ENi1K)	<ul style="list-style-type: none"> <li>Capable of producing weld deposits with 552 MPa (80 ksi) tensile strength</li> <li>Suitable for use in applications requiring less than 1% Ni weld deposits</li> <li>Microguard® Ultra provides superior feeding and arc stability</li> </ul>			✓		✓		
SuperArc® LA-90 (ER80S-D2, ER90S-D2 & EA3K)	<ul style="list-style-type: none"> <li>Capable of producing weld deposits with 552 - 620 MPa (80 - 90 ksi) tensile strength</li> <li>Contains 0.50% molybdenum for strength after stress-relief</li> <li>Microguard® Ultra provides superior feeding and arc stability</li> </ul>			✓	✓	✓	✓	✓

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# Selection Guide

<b>MIG (GMAW) Wire</b>						
Product Name & AWS Class	Key Features	Diameters Available in (mm)				
		0.035 (0.9)	0.040 (1.0)	0.045 (1.1)	0.052 (1.3)	1/16 (1.6)
<b>Low Alloy, Copper Coated</b>						
SuperArc® LA-100 (ER100S-G, ER110S-G & EM2)	<ul style="list-style-type: none"> <li>Capable of producing welds with 690 MPa (100 ksi) tensile strength</li> <li>Excellent for welding quenched and tempered steels and HY-80 base materials</li> <li>Microguard® Ultra provides superior feeding and arc stability</li> </ul>	✓		✓		✓
<b>Mild &amp; Low Alloy Steel Pipe</b>						
Pipeliner® 70S-G (ER70S-G)	<ul style="list-style-type: none"> <li>Root pass capability up to X100 and hot, fill and cap pass up to X70 grade pipe</li> <li>Good back bead shape on STT® root passes</li> <li>Q2 Lot® - Certificate showing actual deposit chemistry available online</li> </ul>			✓		
Pipeliner® 80S-G (ER80S-G)	<ul style="list-style-type: none"> <li>Root pass capability up to X100 and hot, fill and cap pass up to X80 grade pipe</li> <li>Impact toughness tested to -29°C (-20°F)</li> <li>Q2 Lot® - Certificate showing actual deposit chemistry available online</li> </ul>			✓		
Pipeliner® 80Ni1 (ER80S-G)	<ul style="list-style-type: none"> <li>Root pass capability up to X100 and hot, fill and cap pass up to X80 grade pipe</li> <li>Impact toughness capable of exceeding 69 -95 J (51 - 70 ft•lbf) at -50°C (-58°F)</li> <li>Q2 Lot® - Certificate showing actual deposit chemistry available online</li> </ul>		✓	✓ <sup>(1)</sup>		

<sup>(1)</sup> Manufactured to 1.2 mm (0.047 in) diameter.

<b>TIG (GTAW) Cut Lengths</b>				
Product Name & AWS Class	Key Features	Diameters Available in (mm)		
		1/16 (1.6)	3/32 (2.4)	1/8 (3.2)
<b>Mild Steel, Copper Coated</b>				
Lincoln® ER70S-2 (ER70S-2)	<ul style="list-style-type: none"> <li>Contains zirconium, titanium, and aluminum in addition to silicon and manganese</li> <li>Produces x-ray quality welds over most surface conditions</li> <li>Recommended for TIG welding on all grades of steel</li> </ul>	✓	✓	✓
Lincoln® ER70S-6 (ER70S-6)	<ul style="list-style-type: none"> <li>High levels of silicon and manganese for use on slightly contaminated base materials</li> <li>Better puddle fluidity</li> <li>Excellent wetting action</li> </ul>	✓	✓	✓

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# SuperGlide® S3

## Mild Steel, Bare Wire

AWS ER70S-3

### Key Features

- ▶ Deoxidizers tolerate light mill scale
- ▶ Microguard® Ultra provides superior feeding and arc stability
- ▶ Bare wire reduces copper fumes
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

### Typical Applications

- ▶ Clean to light mill scale base material
- ▶ Sheet metal to 380 - 485 MPa (55 - 70 ksi) yield strength material
- ▶ Pipeline
- ▶ Pressure vessels
- ▶ Structural steel

### Welding Positions

All

### Conformances

AWS A5.18/A5.18M: 2005	ER70S-3
ASME SFA-A5.18:	ER70S-3
CWB/CSA W48-06:	ER49S-3

### Shielding Gas

100% CO<sub>2</sub>  
 75 - 95% Argon/Balance CO<sub>2</sub>  
 95 - 98% Argon/Balance O<sub>2</sub>  
 Flow Rate: 30 - 50 CFH

### DIAMETERS / PACKAGING

Diameter in (mm)	44 lb (20 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum	1000 lb (453 kg) Accu-Trak® Drum
0.035 (0.9)	ED028621		
0.045 (1.1)	ED028622	ED030773	ED029087

### MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -18°C (0°F)	@ -29°C (-20°F)
<b>Requirements</b> AWS ER70S-3 As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	27 (20) min.	Not Specified
<b>Test Results<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub>	405 (59)	510 (74)	26	100 (74)	87 (64)

# SuperGlide® S3

(AWS ER70S-3)

## WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%Si	%S	%P
<b>Requirements</b>					
AWS ER70S-3	0.006 - 0.15	0.90 - 1.40	0.45 - 0.75	0.035 max.	0.025 max.
<b>Typical Performance<sup>(3)</sup></b>	0.07 - 0.10	1.15 - 1.27	0.52 - 0.59	0.002 - 0.008	0.005 - 0.013
	%Cr	%Mo	%Ni	%V	%Cu
<b>Requirements</b>					
AWS ER70S-3	0.15 max.	0.15 max.	0.15 max.	0.03 max.	0.50 max.
<b>Typical Performance<sup>(3)</sup></b>	≤ 0.03	≤ 0.01	≤ 0.04	< 0.01	0.02 - 0.04

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD <sup>(4)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(5)</sup>	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
		3.8 (150)	19	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(5)</sup>	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
		3.8 (150)	20	165	1.8 (4.0)
		5.1 (200)	21	200	2.4 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.  
<sup>(5)</sup>Procedures in these areas are procedures for short circuiting mode using 100% CO<sub>2</sub>. When using 75% Argon, 25% CO<sub>2</sub> for short circuit transfer, reduce voltage by 1 to 2 volts.

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# SuperGlide® S6

## Mild Steel, Bare Wire

AWS ER70S-6

### Key Features

- ▶ Deoxidizers tolerate medium to heavy mill scale
- ▶ Microguard® Ultra provides superior feeding and arc stability
- ▶ Bare wire reduces copper fumes
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

### Typical Applications

- ▶ Medium to heavy mill scale base material
- ▶ Sheet metal to 380 - 485 MPa (55 - 70 ksi) yield strength material
- ▶ Automotive repair

### Welding Positions

All

### Conformances

AWS A5.18/A5.18M: 2005	ER70S-6
ASME SFA-A5.18:	ER70S-6
CWB/CSA W48-06:	ER49S-6
MIL-E-23765/1:	MIL-70S-6

### Shielding Gas

100% CO<sub>2</sub>  
 75 - 95% Argon/Balance CO<sub>2</sub>  
 95 - 98% Argon/Balance O<sub>2</sub>  
 Flow Rate: 30 - 50 CFH

### DIAMETERS / PACKAGING

Diameter in (mm)	44 lb (20 kg) Fiber Spool	1000 lb (453 kg) Accu-Trak® Drum
0.035 (0.9)	ED028635	ED029089
0.045 (1.1)	ED028636	ED029090

### MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
<b>Requirements<sup>(4)</sup></b> AWS ER70S-6 As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	27 (20) min.
<b>Test Results<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub>	430 (62)	540 (78)	28	71 (52)

# SuperGlide® S6

(AWS ER70S-6)

## WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%Si	%S	%P
<b>Requirements</b>					
AWS ER70S-6	0.06 - 0.15	1.40 - 1.85	0.80 - 1.15	0.035 max.	0.025 max.
<b>Typical Performance<sup>(3)</sup></b>	0.08 - 0.09	1.42 - 1.65	0.81 - 0.87	0.006 - 0.010	0.004 - 0.010
	%Cr	%Ni	%Mo	%V	%Cu (Total)
<b>Requirements</b>					
AWS ER70S-6	0.15 max.	0.15 max.	0.15 max.	0.03 max.	0.50 max.
<b>Typical Performance<sup>(3)</sup></b>	0.01 - 0.05	≤ 0.04	≤ 0.01	< 0.01	0.01 - 0.04

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD <sup>(4)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(5)</sup>	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
		3.8 (150)	19	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(5)</sup>	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
		3.8 (150)	20	165	1.8 (4.0)
		5.1 (200)	21	200	2.4 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.

<sup>(5)</sup>Procedures in these areas are procedures for short circuiting mode using 100% CO<sub>2</sub>. When using 75% Argon, 25% CO<sub>2</sub> for short circuit transfer, reduce voltage by 1 to 2 volts.

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# SuperArc® L-50

## Mild Steel, Copper Coated

AWS ER70S-3 & EM13K

### Key Features

- ▶ Moderate levels of manganese and silicon for deoxidization of clean to light mill scale surfaces
- ▶ Superior feeding and arc stability
- ▶ Copper coated for long contact tip life
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

### Typical Applications

- ▶ Clean to light mill scale base material
- ▶ Sheet metal to 380 - 485 MPa (55 - 70 ksi) yield strength material
- ▶ Pipeline
- ▶ Pressure vessels
- ▶ Structural steel

### Welding Positions

All

### Conformances

AWS A5.18/A5.18M: 2005	
& ASME SFA-A5.18:	ER70S-3
AWS A5.17/A5.17M: 1997	EM13K
ABS:	3YSA
Lloyd's Register:	3YS H15
DNV Grade:	III YMS
CWB/CSA W48-06:	ER49S-3
MIL-E-23765/1:	MIL-70S-3

### Shielding Gas

100% CO<sub>2</sub>  
 75 - 95% Argon/Balance CO<sub>2</sub>  
 95 - 98% Argon/Balance O<sub>2</sub>  
 Flow Rate: 30 - 50 CFH

### DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Plastic Spool	33 lb (15 kg) Steel Spool	44 lb (20 kg) Steel Spool	44 lb (20 kg) Fiber Spool	60 lb (27 kg) Fiber Spool	500 lb (227 kg) Accu-Trak® Drum
0.030 (0.8)	ED032923	ED031407				ED029223
0.035 (0.9)	ED032924	ED031408	ED031914	ED021268	ED021269	ED021052
0.045 (1.1)	ED032925	ED031409	ED031915	ED021270	ED021271	ED020526
0.052 (1.3)			ED031916		ED021273	ED020527
1/16 (1.6)					ED027274	
Diameter in (mm)	500 lb (227 kg) Accu-Pak® Box	600 lb (272 kg) Speed-Feed® Drum	1000 lb (453 kg) Accu-Trak® Drum	900 lb (408 kg) Accu-Pak® Box		1000 lb (453 kg) Accu-Pak® Box
0.030 (0.8)						
0.035 (0.9)	ED032899		ED028825	ED032842		
0.045 (1.1)	ED032901		ED028826			ED032844
0.052 (1.3)	ED032902		ED029082			ED032845
1/16 (1.6)	ED032903	ED011316	ED029083			ED032846

# SuperArc® L-50

(AWS ER70S-3)

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -18°C (0°F)	@ -29°C (-20°F)
<b>Requirements</b> AWS ER70S-3 As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	27 (20) min.	Not Specified
MIL-70S-3 per MIL-E-23765/1 As-Welded with CO <sub>2</sub> and 98% Ar/2% O <sub>2</sub>	380 - 485 (55 - 70)	485 (70) min.	22 min.	Not Specified	Not Specified
<b>Test Results<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	415 (60) 365 (53)	515 (75) 475 (69)	26 34	95 (70) 118 (87)	88 (65) 100 (74)
As-Welded with 75% Ar/25% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	420 (61) 365 (53)	525 (76) 490 (71)	28 33	106 (78) 165 (122)	102 (75) 163 (120)
As-Welded with 90% Ar/10% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	450 (65) 365 (53)	545 (79) 485 (70)	30 35	142 (105) – –	122 (90) 214 (158)
As-Welded with 98% Ar/2% O <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	425 (62) 350 (51)	540 (78) 475 (69)	27 33	108 (80) – –	95 (70) 339 (250)

## WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%Si	%S	%P
<b>Requirements</b> AWS ER70S-3	0.006 - 0.15	0.90 - 1.40	0.45 - 0.75	0.035 max.	0.025 max.
<b>Typical Performance<sup>(3)</sup></b>	0.08 - 0.11	1.14 - 1.23	0.53 - 0.59	0.003 - 0.009	0.003 - 0.013
	%Cr	%Mo	%Ni	%V	%Cu (Total) <sup>(4)</sup>
<b>Requirements</b> AWS ER70S-3	0.15 max.	0.15 max.	0.15 max.	0.03 max.	0.50 max.
<b>Typical Performance<sup>(3)</sup></b>	≤ 0.04	≤ 0.02	≤ 0.03	< 0.01	0.15 - 0.25

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**SuperArc® L-50**

(AWS ER70S-3)

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
<b>0.030 in (0.8 mm), DC+</b>					
Short Circuit	9-12 (3/8-1/2)	1.9 (75)	17	35	0.4 (0.9)
Transfer		3.8 (150)	18	70	0.8 (1.8)
100% CO <sub>2</sub>		7.6 (300)	22	130	1.6 (3.6)
<b>0.035 in (0.9 mm), DC+</b>					
Short Circuit	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
Transfer		3.8 (150)	19	120	1.1 (2.4)
100% CO <sub>2</sub> <sup>(6)</sup>		6.4 (250)	22	175	1.8 (4.0)
Spray	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
Transfer		12.7 (500)	29	230	3.6 (8.0)
90% Ar/10% CO <sub>2</sub>		15.2 (600)	30	275	4.4 (9.6)
<b>0.045 in (1.1 mm), DC+</b>					
Short Circuit	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
Transfer		3.8 (150)	20	165	1.8 (4.0)
100% CO <sub>2</sub> <sup>(6)</sup>		5.1 (200)	21	200	2.5 (5.4)
Spray	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
Transfer		12.1 (475)	30	335	5.7 (12.5)
90% Ar/10% CO <sub>2</sub>		12.7 (500)	30	340	6.0 (13.2)
<b>0.052 in (1.3 mm), DC+</b>					
Spray Transfer	12-19 (1/2-3/4)	7.6 (300)	30	300	4.8 (10.6)
100% CO <sub>2</sub>		8.1 (320)	30	320	5.2 (11.5)
		12.3 (485)	32	430	7.8 (17.1)
<b>1/16 in (1.6 mm), DC+</b>					
Spray Transfer	12-25 (1/2-1)	5.3 (210)	25	325	4.8 (10.7)
100% CO <sub>2</sub>		6.0 (235)	27	350	5.4 (12.0)
		7.4 (290)	28	430	6.7 (14.8)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. <sup>(5)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. <sup>(6)</sup>Procedures in these areas are procedures for short circuiting mode using 100% CO<sub>2</sub>. When using 75% Argon, 25% CO<sub>2</sub> for short circuit transfer, reduce voltage by 1 to 2 volts.

# SuperArc® L-56

Mild Steel, Copper Coated  
AWS ER70S-6 & EH11K

## Key Features

- ▶ High levels of manganese and silicon deoxidizers tolerate medium to heavy mill scale surfaces
- ▶ Excellent toe-wetting provides optimal bead appearance
- ▶ Copper coated for long contact tip life
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

## Typical Applications

- ▶ Medium to heavy mill scale base material
- ▶ Sheet metal to 380 - 485 MPa (55 - 70 ksi) yield strength material
- ▶ Automotive repair
- ▶ Robotic or hard automation
- ▶ Structural steel

## Welding Positions

All

## Conformances

AWS A5.18/A5.18M: 2005	
& ASME SFA-A5.18:	ER70S-6
AWS A5.17/A5.17M: 1997	EH11K
ABS:	3YSA
Lloyd's Register:	3YS H15
DNV Grade:	III YMS
CWB/CSA W48-06:	ER49S-6
DB:	EN 440 G3Si1
TUV:	EN 440 G3Si1
MIL-E-23765/1:	MIL-70S-6

## Shielding Gas

100% CO<sub>2</sub>  
75 - 95% Argon/Balance CO<sub>2</sub>  
95 - 98% Argon/Balance O<sub>2</sub>  
Flow Rate: 30 - 50 CFH

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METAL-CORED

**SuperArc® L-56**

(AWS ER70S-6)

**DIAMETERS / PACKAGING**

Diameter in (mm)	2 lb (1 kg) Plastic Spool		12.5 lb (6 kg) Plastic Spool	33 lb (15 kg) Plastic Spool	33 lb (15 kg) Steel Spool	44 lb (20 kg) Fiber Spool
	10 lb (4.5 kg) Carton					
0.025 (0.6)	ED030583		ED015790	ED032926 ED032927 ED032928	ED031411  ED031412	ED021274 ED027384 ED021276 ED021278
0.030 (0.8)	ED030631		ED023334			
0.035 (0.9)	ED030632		ED028676			
0.040 (1.0)						
0.045 (1.1)						
0.052 (1.3)						
1/16 (1.6)						
Diameter in (mm)	44 lb (20 kg) Steel Spool	60 lb (27 kg) Fiber Spool	250 lb (113 kg) Accu-Trak® Drum	500 lb (227 kg) Accu-Trak® Drum	500 lb (227 kg) Accu-Pak® Box	
0.025 (0.6)	ED025945	ED021275	ED029914	ED021056	ED032904	
0.030 (0.8)						
0.035 (0.9)	ED025946	ED021277	ED029915	ED020532	ED032906	
0.040 (1.0)						
0.045 (1.1)	ED025946	ED021279	ED029916	ED020533	ED032907	
0.052 (1.3)						
1/16 (1.6)				ED029225		
Diameter in (mm)	900 lb (408 kg) Accu-Pak® Box	1000 lb (453 kg) Accu-Trak® Drum	1000 lb (453 kg) Accu-Pak® Box			
0.025 (0.6)	ED032847	ED028827				
0.030 (0.8)						
0.035 (0.9)	ED032847	ED031032				
0.040 (1.0)						
0.045 (1.1)	ED032849	ED028828				
0.052 (1.3)						
1/16 (1.6)		ED029084				
		ED029085				
			ED032850			
			ED032851			

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# SuperArc® L-56

(AWS ER70S-6)

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -29°C (-20°F)	@ -40°C (-40°F)
<b>Requirements</b> AWS ER70S-6 As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	27 (20) min.	Not Specified
MIL-70S-6 per MIL-E-23765/1 As-Welded with CO <sub>2</sub> and 98% Ar/2% O <sub>2</sub>	380 - 550 (55 - 80)	485 (70) min.	22 min.	Not Specified	Not Specified
MIL-70S-6 per MIL-E-23765/1 Stress Relieved 1 hr. @ 621°C (1150° F) With CO <sub>2</sub> and 98% Ar/2% O <sub>2</sub>	360 (52) min.	485 (70) min.	26 min.	27 (20) min.	Not Specified
<b>Typical Performance<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	440 (64) 395 (57)	560 (81) 510 (74)	29 29	71 (52) 95 (70)	61 (45) 68 (50)
As-Welded with 75% Ar/25% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	460 (67) 415 (60)	565 (82) 540 (78)	27 31	82 (60) 140 (103)	72 (53) 122 (90)
As-Welded with 90% Ar/10% CO <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	470 (68) 440 (64)	580 (84) 550 (80)	28 32	119 (88) 183 (135)	78 (57) 156 (115)
As-Welded with 98% Ar/2% O <sub>2</sub> Stress Relieved 1 hr. @ 621°C (1150°F)	455 (66) 415 (60)	565 (82) 545 (79)	27 34	122 (90) 190 (140)	108 (80) 176 (130)

## WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%Si	%S	%P
<b>Requirements</b> AWS ER70S-6	0.06 - 0.15	1.40 - 1.85	0.80 - 1.15	0.035 max.	0.025 max.
<b>Typical Performance<sup>(3)</sup></b>	0.08 - 0.09	1.42 - 1.65	0.81 - 0.87	0.006 - 0.010	0.004 - 0.010
	%Cr	%Ni	%Mo	%V	%Cu (Total) <sup>(4)</sup>
<b>Requirements</b> AWS ER70S-6	0.15 max.	0.15 max.	0.15 max.	0.03 max.	0.50 max.
<b>Typical Performance<sup>(3)</sup></b>	0.01 - 0.05	≤ 0.04	≤ 0.01	< 0.01	0.17 - 0.22

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**SuperArc® L-56**

(AWS ER70S-6)

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
<b>0.025 in (0.6 mm), DC+</b>					
Short Circuit Transfer 100% CO <sub>2</sub>	9-12 (3/8-1/2)	2.5 (100)	17	35	0.4 (0.9)
		6.4 (250)	19	80	0.9 (2.0)
<b>0.030 in (0.8 mm), DC+</b>					
Short Circuit Transfer 100% CO <sub>2</sub>	9-12 (3/8-1/2)	1.9 (75)	17	35	0.4 (0.9)
		3.8 (150)	18	70	0.8 (1.8)
		7.6 (300)	22	130	1.6 (3.6)
<b>0.035 in (0.9 mm), DC+</b>					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(6)</sup>	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
		3.8 (150)	19	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
<b>0.045 in (1.1 mm), DC+</b>					
Short Circuit Transfer 100% CO <sub>2</sub> <sup>(6)</sup>	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
		3.8 (150)	20	165	1.8 (4.0)
		5.1 (200)	21	200	2.5 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)
<b>0.052 in (1.3 mm), DC+</b>					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	7.6 (300)	30	300	4.8 (10.7)
		8.1 (320)	30	320	5.2 (11.5)
		12.3 (485)	32	430	7.8 (17.1)
<b>1/16 in (1.6 mm), DC+</b>					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-25 (1/2-1)	5.3 (210)	27	325	4.8 (10.7)
		6.0 (235)	28	350	5.4 (12.0)
		7.4 (290)	29	430	6.7 (14.8)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. <sup>(5)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. <sup>(6)</sup>Procedures in these areas are procedures for short circuiting mode using 100% CO<sub>2</sub>. When using 75% Argon, 25% CO<sub>2</sub> for short circuit transfer, reduce voltage by 1 to 2 volts.

# SuperArc® L-59

Mild Steel, Copper Coated  
AWS ER70S-6

## Key Features

- ▶ High deposition rates similar to metal-cored wire
- ▶ Minimal spatter
- ▶ Engineered alloy system enhances silicon island management
- ▶ Copper coated for long contact tip life
- ▶ Fast travel speeds

## Typical Applications

- ▶ Robotic or hard automation
- ▶ Automotive
- ▶ Pipeline & Offshore
- ▶ Pressure vessels
- ▶ Alternative to metal-cored wire

## Welding Positions

All

## Conformances

AWS A5.18/A5.18M: 2005 ER70S-6  
 ASME SFA-A5.18: ER70S-6  
 ABS: 3YSA (100 CO<sub>2</sub> & Mixed)  
 DNV Grade: III YMS H5 (Mixed)  
 BV Grade: SA3YHHH (Mixed)  
 CWB/CSA W48-06: ER49S-6

## Shielding Gas

100% CO<sub>2</sub>  
 75 - 95% Argon/Balance CO<sub>2</sub>  
 95 - 98% Argon/Balance O<sub>2</sub>  
 Flow Rate: 30 - 50 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	44 lb (20 kg) Fiber Spool	44 lb (20 kg) Steel Spool	60 lb (27 kg) Fiber Spool	500 lb (227 kg) Accu-Pak® Box	900 lb (409 kg) Accu-Pak® Box	1000 lb (453 kg) Accu-Pak® Box
0.035 (0.9)	ED033033	ED032366		ED032894	ED032861	
0.040 (1.0)				ED032895		ED032862
0.045 (1.1)		ED032367		ED032896		ED032863
0.052 (1.3)		ED032368	ED032814	ED032897		ED032864
1/16 (1.6)		ED032968				ED032865

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -29°C (-20°F)	@ -40°C (-40°F)
<b>Requirements</b> AWS ER70S-6 As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	27 (20) min.	Not Specified
<b>Test Results<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub>	455 (66)	565 (82)	28	71 (52)	53 (39)
As-Welded with 75% Ar/25% CO <sub>2</sub>	485 (70)	595 (86)	25	56 (41)	53 (39)
As-Welded with 90% Ar/10% CO <sub>2</sub>	460 (67)	570 (83)	25	75 (55)	65 (48)

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**SuperArc® L-59**

(AWS ER70S-6)

**WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005**

	%C	%Mn	%Si	%S	%P
<b>Requirements</b> AWS ER70S-6	0.06 - 0.15	1.40 - 1.85	0.80 - 1.15	0.035 max.	0.025 max.
	%Cu <sup>(4)</sup>	%Ni	%Cr	%Mo	%V
<b>Requirements</b> AWS ER70S-6	0.50 max.	0.15 max.	0.15 max.	0.15 max.	0.03 max.

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	12 (1/2)	2.5 (100)	17	80	0.7 (1.6)
		3.8 (150)	18	120	1.1 (2.4)
		6.4 (250)	20	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	19 (3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	12 (1/2)	3.2 (125)	18	145	1.5 (3.4)
		3.8 (150)	19	165	1.8 (4.0)
		5.1 (200)	20	200	2.4 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	19 (3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)
0.052 in (1.3 mm), DC+					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	19 (3/4)	7.6 (300)	30	300	4.8 (10.6)
		8.1 (320)	30	320	5.2 (11.5)
		12.3 (485)	32	430	7.8 (17.1)
1/16 in (1.6 mm), DC+					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	19 (3/4)	5.3 (210)	25	325	4.8 (10.7)
		6.0 (235)	27	350	5.4 (12.0)
		7.4 (290)	28	430	6.7 (14.8)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. <sup>(5)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. <sup>(6)</sup>Procedures in these areas are procedures for short circuiting mode using 75% Argon, 25% CO<sub>2</sub>.

NOTE: For 100% CO<sub>2</sub> procedures, add 1 to 2 volts for short circuit transfer and 2 to 3 volts for globular transfer.

# SuperArc<sup>®</sup> LA-75

Low Alloy, Copper Coated  
AWS ER80S-Ni1 & ENi1K

## Key Features

- ▶ Capable of producing weld deposits with 550 MPa (80 ksi) tensile strength
- ▶ Suitable for use in applications requiring less than 1% Ni weld deposits
- ▶ Microguard<sup>®</sup> Ultra provides superior feeding and arc stability
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

## Typical Applications

- ▶ ASTM A588 weathering steel requiring good atmospheric corrosion resistance
- ▶ NACE applications

## Welding Positions

All

## Conformances

AWS A5.28/A5.28M: 2005  
& ASME SFA-A5.28: ER80S-Ni1  
AWS A5.17/A5.17M: 1997 ENi1K  
ABS: ER80S-Ni1  
CWB/CSA W48-06: ER55S-Ni1 (ER80S-Ni1)

## Shielding Gas

75 - 95% Argon/Balance CO<sub>2</sub>  
95 - 98% Argon/Balance O<sub>2</sub>  
Flow Rate: 30 - 50 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Steel Spool
0.035 (0.9)	ED031415
0.045 (1.1)	ED031416

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.28/A5.28M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)		
				@ -29°C (-20°F)	@ -45°C (-50°F)	@ -62°C (-80°F)
<b>Requirements</b>						
AWS ER80S-Ni1	470 (68)	550 (80)	24	Not Specified	27 (20)	Not Specified
As-Welded with 98% Ar/2% O <sub>2</sub>	min.	min.	min.		min.	
<b>Test Results<sup>(3)</sup></b>						
As-Welded with 90% Ar/10% CO <sub>2</sub>	475 (69)	580 (84)	28	119 (88)	82 (60)	35 (26)
Stress Relieved 1 hr. @ 621°C (1150° F)	450 (65)	565 (82)	32	- -	127 (93)	112 (82)
As-Welded with 75% Ar/25% CO <sub>2</sub>	495 (72)	595 (86)	27	49 (36)	54 (40)	- -
Stress Relieved 1 hr. @ 621°C (1150° F)	440 (64)	560 (81)	31	127 (94)	114 (84)	54 (40)
As-Welded with 98% Ar/2% O <sub>2</sub>	490 (71)	580 (84)	30	- -	172 (127)	- -
Stress Relieved 1 hr. @ 621°C (1150° F)	420 (61)	540 (78)	31	- -	230 (170)	165 (122)

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METAL-CORED

**SuperArc® LA-75**

(AWS ER80S-Ni1 &amp; ENi1K)

**WIRE COMPOSITION – As Required per AWS A5.28/A5.28M: 2005**

	%C	%Mn	%Si	%Ni	%Cr
<b>Requirements</b>					
AWS ER80S-Ni1	0.12 max.	1.25 max.	0.40 - 0.80	0.80 - 1.10	0.15 max.
<b>Typical Performance<sup>(3)</sup></b>	0.07 - 0.08	0.94 - 1.04	0.54 - 0.58	0.88 - 0.98	≤ 0.04
	%Mo	%S	%P	%V	%Cu (Total) <sup>(4)</sup>
<b>Requirements</b>					
AWS ER80S-Ni1	0.35 max.	0.025 max.	0.025 max.	0.05 max.	0.35 max.
<b>Typical Performance<sup>(3)</sup></b>	≤ 0.02	0.007 - 0.010	0.005 - 0.010	< 0.01	0.16 - 0.21

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
0.035 in (0.9 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	9-12 (3/8-1/2)	2.5 (100)	17	80	0.7 (1.6)
		3.8 (150)	18	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
0.045 in (1.1 mm), DC+					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
		3.8 (150)	20	165	1.8 (4.0)
		5.1 (200)	21	200	2.4 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. <sup>(5)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. <sup>(6)</sup>Procedures in the shaded areas are procedures for short circuiting mode using 75% Argon, 25% CO<sub>2</sub>.

NOTE: For 100% CO<sub>2</sub> procedures, add 1 to 2 volts for short circuit transfer and 2 to 3 volts for globular transfer.

# SuperArc® LA-90

Low Alloy, Copper Coated  
AWS ER80S-D2, ER90S-D2 & EA3K

## Key Features

- ▶ Capable of producing weld deposits with 550 - 620 MPa (80 - 90 ksi) tensile strength
- ▶ Contains 0.50% molybdenum for strength after stress-relief
- ▶ Microguard® Ultra provides superior feeding and arc stability
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

## Typical Applications

- ▶ Requirements for strength after stress relieving
- ▶ ASTM A182, A217, A234 and A335 high temperature service pipe, fittings, flanges and valves
- ▶ ASTM A336 pressure vessel forgings

## Welding Positions

All

## Conformances

AWS A5.28/A5.28M: 2005	
& ASME SFA-A5.28:	ER80S-D2 (100% CO <sub>2</sub> ), ER90S-D2 (Mixed)
AWS A5.23/A5.23M: 2007	EA3K
CWB/CSA W48-06:	ER55S-D2 (ER80S-D2), ER62S-D2 (ER90S-D2)
MIL-E-23765/2:	MIL-80S-3

## Shielding Gas

100% CO<sub>2</sub>  
75 - 95% Argon/Balance CO<sub>2</sub>  
95 - 98% Argon/Balance O<sub>2</sub>  
Flow Rate: 30 - 50 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Steel Spool	44 lb (20 kg) Steel Spool	44 lb (20 kg) Fiber Spool	60 lb (27 kg) Fiber Spool
0.035 (0.9)	ED031413	EDS30775	ED029546	
0.045 (1.1)	ED031414	EDS30776		EDS01380
0.052 (1.3)		EDS30777		
1/16 (1.6)				
Diameter in (mm)	500 lb (227 kg) Accu-Trak® Drum	1000 lb (453 kg) Accu-Trak® Drum	1000 lb (453 kg) Speed-Feed® Reel	
0.035 (0.9)	EDS01372	EDS29590		
0.045 (1.1)	ED001378	ED029591	ED014828	
0.052 (1.3)		ED029592	EDS01383	
1/16 (1.6)				

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# SuperArc® LA-90

(AWS ER80S-D2, ER90S-D2 & EA3K)

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.28/A5.28M: 2005

	Yield Strength <sup>(2)</sup>	Tensile Strength	Elongation	Charpy V-Notch J (ft•lbf)	
	MPa (ksi)	MPa (ksi)	%	@ -29°C (-20°F)	@ -40°C (-40°F)
<b>Requirements</b>					
AWS ER80S-D2 As-Welded with 100% CO <sub>2</sub>	470 (68) min.	550 (80) min.	17 min.	27 (20) min.	Not Specified
AWS ER90S-D2 As-Welded with 95-99% Ar/Balance O <sub>2</sub>	540 (78) min.	620 (90) min.	17 min.	27 (20) min.	Not Specified
<b>Test Results<sup>(3)</sup></b>					
As-Welded with 100% CO <sub>2</sub>	560 (81)	655 (95)	23	36 (26)	- -
As-Welded with 95% Ar/5% O <sub>2</sub>	650 (94)	730 (106)	25	125 (92)	- -
As-Welded with 75% Ar/25% CO <sub>2</sub>	620 (90)	705 (102)	26	124 (91)	122 (90)

## WIRE COMPOSITION – As Required per AWS A5.28/A5.28M: 2005

	%C	%Mn	%Si	%Ni
<b>Requirements</b>				
AWS ER80S-D2 & ER90S-D2	0.07 - 0.12	1.60 - 2.10	0.50 - 0.80	0.15 max.
<b>Typical Performance<sup>(3)</sup></b>	0.09 - 0.11	1.63 - 1.74	0.56 - 0.64	≤ 0.04
	%Mo	%S	%P	%Cu (Total) <sup>(4)</sup>
<b>Requirements</b>				
AWS ER80S-D2 & ER90S-D2	0.40 - 0.60	0.025 max.	0.025 max.	0.50 max.
<b>Typical Performance<sup>(3)</sup></b>	0.43 - 0.46	≤ 0.010	0.007 - 0.016	0.16 - 0.22

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STICK

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METAL-CORED

# SuperArc® LA-90

(AWS ER80S-D2, ER90S-D2 & EA3K)

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
<b>0.035 in (0.9 mm), DC+</b>					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
		3.8 (150)	19	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
<b>0.045 in (1.1 mm), DC+</b>					
Short Circuit Transfer 75% Ar/25% CO <sub>2</sub> <sup>(6)</sup>	12-19 (1/2-3/4)	3.2 (125)	19	145	1.5 (3.4)
		3.8 (150)	20	165	1.8 (4.0)
		5.1 (200)	21	200	2.5 (5.4)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)
<b>0.052 in (1.3 mm), DC+</b>					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-19 (1/2-3/4)	7.6 (300)	30	300	4.8 (10.6)
		8.1 (320)	30	320	5.2 (11.5)
		12.3 (485)	32	430	7.8 (17.1)
<b>1/16 in (1.6 mm), DC+</b>					
Spray Transfer 90% Ar/10% CO <sub>2</sub>	12-25 (1/2-1)	5.3 (210)	25	325	4.8 (10.7)
		6.0 (235)	27	350	5.4 (12.0)
		7.4 (290)	28	430	6.7 (14.8)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>Copper due to any coating on the electrode plus the copper content of the filler metal itself, shall not exceed the stated 0.50% max. <sup>(5)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout. <sup>(6)</sup>Procedures in these areas are procedures for short circuiting mode using 75% Argon, 25% CO<sub>2</sub>.

NOTE: For 100% CO<sub>2</sub> procedures, add 1 to 2 volts for short circuit transfer and 2 to 3 volts for globular transfer.

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METAL-CORED

# SuperArc® LA-100

## Low Alloy, Copper Coated

AWS ER100S-G, ER110S-G & EM2

### Key Features

- ▶ Capable of producing welds with 690 MPa (100 ksi) tensile strength
- ▶ Excellent for welding quenched and tempered steels and HY-80 base materials
- ▶ Microguard® Ultra provides superior feeding and arc stability
- ▶ Supports short-circuiting, globular, axial spray and pulsed spray transfer

### Typical Applications

- ▶ HY-80 base material
- ▶ ASTM A514, A543, A724 and A782 quenched and tempered plate
- ▶ Various heat input conditions
- ▶ Military low alloy applications

### Welding Positions

All

### Conformances

AWS A5.28/A5.28M: 2005 & ASME SFA-A5.28:	ER100S-G, ER110S-G
AWS A5.23/A5.23M: 2007	EM2
ABS:	4YQ550SA
CWB/CSA W48-06:	ER69S-G (ER100S-G)
DB:	EN 12534 T 69 5 Mn3Ni1, 5 Mo
TUV:	EN 12534 T 69 5 Mn3Ni1, 5 Mo
MIL-E-23765/2:	MIL-100S-1

### Shielding Gas

90 - 95% Argon/Balance CO<sub>2</sub>  
 95 - 98% Argon/Balance O<sub>2</sub>  
 Flow Rate: 30 - 50 CFH

### DIAMETERS / PACKAGING

Diameter in (mm)	33 lb (15 kg) Steel Spool	44 lb (20 kg) Steel Spool	500 lb (227 kg) Accu-Trak® Drum
0.035 (0.9)		EDS30778	ED031445
0.045 (1.1)	ED031417	EDS30779	EDS01162
1/16 (1.6)			

# SuperArc® LA-100

(AWS ER100S-G, ER110S-G & EM2)

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.28/A5.28M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -18°C (0°F) @ -51°C (-60°F)	
<b>Requirements</b>					
AWS ER100S-G As-Welded - Gas Not Specified	Not Specified	690 (100) min.	Not Specified	Not Specified	Not Specified
AWS ER110S-G As-Welded - Gas Not Specified	Not Specified	760 (110) min.	Not Specified	Not Specified	Not Specified
MIL-100S-1 per MIL-E-23765/2C, 2D, 2E & T9074-BC-G1B-010/0200 As-Welded with 98% Ar /2% O <sub>2</sub>	565 - 825 (82 - 120)	Not Specified	16 min.	81 (60) min.	47 (35) min.
<b>Test Results<sup>(3)</sup></b>					
As-Welded at 30 kJ/in with 95% Ar/5% CO <sub>2</sub>	750 (109)	790 (115)	22	164 (121)	138 (102)
As-Welded at 45 kJ/in with 98% Ar/2% O <sub>2</sub>	730 (106)	780 (114)	20	- -	118 (87)
<b>Pulse</b>					
As-Welded at 110 kJ/in with 95% Ar/5% CO <sub>2</sub>	580 (84)	745 (108)	25	138 (102)	70 (52)
<b>CV</b>					
As-Welded at 110 kJ/in with 95% Ar/5% CO <sub>2</sub>	620 (90)	740 (107)	25	170 (125)	106 (78)
As-Welded at 45 kJ/in with 95% Ar/5% CO <sub>2</sub>	682 (99)	765 (111)	20	- -	117 (86)

## WIRE COMPOSITION – As Required per AWS A5.28/A5.28M: 2005

	%C	%Mn	%Si	%Ni	%Mo	%Cr	%S
<b>Requirements</b>							
AWS ER100S-G, ER110S-G	-	-	-	(A)	(A)	(A)	-
<b>Typical Performance<sup>(3)</sup></b>	0.05 - 0.06	1.63 - 1.69	0.46 - 0.50	1.88 - 1.96	0.43 - 0.45	0.04 - 0.06	0.002 - 0.005
	%P	%V	%Al	%Ti	%Zr	%Cu	
<b>Requirements</b>							
AWS ER100S-G, ER110S-G	-	-	-	-	-		-
<b>Typical Performance<sup>(3)</sup></b>	0.005 - 0.009	≤ 0.01	≤ 0.01	0.03 - 0.04	≤ 0.01	0.11 - 0.14	

(A) Must have the minimum of one or more of the following: 0.50% Ni, 0.30% Cr, or 0.20% Mo.

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METAL-CORED

**SuperArc® LA-100**

(AWS ER100S-G, ER110S-G &amp; EM2)

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
<b>0.035 in (0.9 mm), DC+</b>					
Short Circuit Transfer 90% Ar/25% CO <sub>2</sub>	9-12 (3/8-1/2)	2.5 (100)	18	80	0.7 (1.6)
		3.8 (150)	19	120	1.1 (2.4)
		6.4 (250)	22	175	1.8 (4.0)
Spray Transfer 90% Ar/10% CO <sub>2</sub>	9-12 (3/8-1/2)	9.5 (375)	23	195	2.7 (6.0)
		12.7 (500)	29	230	3.6 (8.0)
		15.2 (600)	30	275	4.4 (9.6)
<b>0.045 in (1.1 mm), DC+</b>					
Pulsed Spray Transfer <sup>(6)</sup>	12-19 (1/2-3/4)	5.1 (200)	19-21	130	2.4 (5.4)
		6.4 (250)	20-23	140	3.0 (6.7)
Spray Transfer 98% Ar/2% O <sub>2</sub> 95% Ar/5% CO <sub>2</sub>	12-19 (1/2-3/4)	8.9 (350)	27	285	4.2 (9.2)
		12.1 (475)	30	335	5.7 (12.5)
		12.7 (500)	30	340	6.0 (13.2)
<b>0.052 in (1.3 mm), DC+</b>					
Spray Transfer 98% Ar/2% O <sub>2</sub> 95% Ar/5% CO <sub>2</sub>	12-25 (1/2-1)	5.3 (210)	25	325	4.8 (10.7)
		6.0 (235)	27	350	5.4 (12.0)
		7.4 (290)	28	430	6.7 (14.8)
		(1/2-1)			

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.

<sup>(5)</sup>Procedures in this area are for pulse MIG mode for welding in the vertical up and overhead welding positions. Actual results are dependent on joint, material thickness, as well as wave shape and pulse frequency.

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METAL-CORED

# Pipeliners<sup>®</sup> 70S-G

Mild & Low Alloy Steel Pipe  
AWS ER70S-G

## Key Features

- ▶ Root pass capability up to X100 and hot, fill and cap pass up to X70 grade pipe
- ▶ Good back bead shape on STT<sup>®</sup> root passes
- ▶ Q2 Lot<sup>®</sup> - Certificate showing actual deposit chemistry available online
- ▶ Low silicon level for minimal clean-up
- ▶ ProTech<sup>®</sup> packaging system

## Typical Applications

- ▶ Root pass welding of up to X100 grade pipe
- ▶ Hot, fill and cap pass welding of up to X70 grade pipe

## Welding Positions

All

## Conformances

AWS A5.18/A5.18M: 2005 ER70S-G  
ASME SFA-A5.18: ER70S-G

## Shielding Gas

100% CO<sub>2</sub>  
75 - 95% Argon/Balance CO<sub>2</sub>  
Flow Rate: 30 - 50 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Plastic Spool (Vacuum Sealed Foil Bag)	25 lb (11.3 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED030904	ED030905

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**Pipelin<sup>®</sup> 70S-G**

(AWS ER70S-G)

**MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.18/A5.18M: 2005**

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
<b>Requirements</b> AWS ER70S-G As-Welded with 100% CO <sub>2</sub>	400 (58) min.	485 (70) min.	22 min.	Not Specified
<b>Typical Performance<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub>	405 - 425 (59 - 62)	510 - 540 (74 - 78)	24 - 26	54 - 81 (40 - 60)

**WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005**

	%C	%Mn	%Si	%S	%P	%Cu
<b>Requirements</b> AWS ER70S-G	Not Specified					
<b>Typical Performance<sup>(3)</sup></b>	0.05 - 0.15	0.80 - 1.40	0.30 - 0.60	≤0.02	≤0.02	≤0.02

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity	CTWD <sup>(4)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
1.1 mm (0.045 in) DC+	12 - 19 (1/2 - 3/4)	3.2 - 12.7 (125 - 500)	19 - 30	145 - 340	1.5 - 6.0 (3.4 - 13.2)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in. (6.4 mm) to calculate Electrical Stickout.

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METAL-CORED

# Pipelin<sup>®</sup>er 80S-G

Mild & Low Alloy Steel Pipe  
AWS ER80S-G

## Key Features

- ▶ Root pass capability up to X100 and hot, fill and cap pass up to X80 grade pipe
- ▶ Impact toughness tested to -29°C (-20°F)
- ▶ Q2 Lot<sup>®</sup> - Certificate showing actual deposit chemistry available online
- ▶ Microguard<sup>®</sup> Ultra provides superior feeding and arc stability
- ▶ ProTech<sup>®</sup> packaging system

## Typical Applications

- ▶ Root pass welding of up to X100 grade pipe
- ▶ Hot, fill and cap pass welding of up to X80 grade pipe

## Welding Positions

All

## Conformances

AWS A5.28/A5.28M: 2005 ER80S-G  
ASME SFA-A5.28: ER80S-G

## Shielding Gas

100% CO<sub>2</sub>  
75 - 95% Argon/Balance CO<sub>2</sub>  
Flow Rate: 30 - 50 CFH

## DIAMETERS / PACKAGING

Diameter in (mm)	10 lb (4.5 kg) Plastic Spool (Vacuum Sealed Foil Bag)	30 lb (13.6 kg) Plastic Spool (Vacuum Sealed Foil Bag)
0.045 (1.1)	ED031493	ED031494

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METAL-CORED

**Pipelinor<sup>®</sup> 80S-G**

(AWS ER80S-G)

**MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.28/A5.28M: 2005**

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf) @ -29°C (-20°F)
<b>Requirements</b> AWS ER80S-G As-Welded with 100% CO <sub>2</sub>	Not Specified	550 (80) min.	Not Specified	Not Specified
<b>Typical Performance<sup>(3)</sup></b> As-Welded with 100% CO <sub>2</sub> As-Welded with 80% Ar/20% CO <sub>2</sub>	585 - 620 (85 - 90) 620 - 690 (90 - 100)	620 - 690 (90 - 100) 690 - 760 (100 - 110)	22 - 24 20 - 24	27 - 54 (20 - 40) 110 - 150 (80 - 110)

**WIRE COMPOSITION – As Required per AWS A5.28/A5.28M: 2005**

	%C	%Mn	%Si	%S	%P	%Cu
<b>Requirements</b> AWS ER80S-G	Not Specified					
<b>Typical Performance<sup>(3)</sup></b>	0.05 - 0.15	1.40 - 1.60	0.40 - 0.70	≤0.02	≤0.02	≤0.02

**TYPICAL OPERATING PROCEDURES**

Diameter, Polarity	CTWD <sup>(4)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
1.1 mm (0.045 in) DC+	12 - 19 (1/2 - 3/4)	3.2 - 12.7 (125 - 500)	19 - 30	145 - 340	1.5 - 6.0 (3.4 - 13.2)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>CTWD (Contact Tip to Work Distance). Subtract 1/4 in (6.4 mm) to calculate Electrical Stickout.

# Pipelin<sup>®</sup>er 80Ni1

Mild & Low Alloy Steel Pipe  
AWS ER80S-G

## Key Features

- ▶ Root pass capability up to X100 and hot, fill and cap pass up to X80 grade pipe
- ▶ Impact toughness capable of exceeding 69 -95 J (51 - 70 ft•lbf) at -50°C (-58°F)
- ▶ Q2 Lot<sup>®</sup> - Certificate showing actual deposit chemistry available online
- ▶ Excellent wire placement for narrow groove welding
- ▶ ProTech<sup>®</sup> packaging system

## Typical Applications

- ▶ Root pass welding on up to X100 grade pipe
- ▶ Hot, fill and cap pass welding on up to X80 grade pipe
- ▶ Pipeline
- ▶ Offshore

## Welding Positions

All

## Conformances

AWS A5.28/A5.28M: 2005	ER80S-G
ASME SFA-5.28:	ER80S-G
EN ISO:	14341-A-G 3Ni1

## Shielding Gas

75 - 95% Argon/Balance CO<sub>2</sub>  
100% CO<sub>2</sub>

## DIAMETERS / PACKAGING

Diameter mm (in)	10 lb (4.5 kg) Plastic Spool (Vacuum Sealed Foil Bag)	33 lb (15 kg) Plastic Spool (Vacuum Sealed Foil Bag)
1.1 (0.040)	ED033121	ED033119
1.2 (0.047)	ED033122	ED033120

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METAL-CORED

# Pipeliner<sup>®</sup> 80Ni1

(AWS ER80S-G)

## MECHANICAL PROPERTIES<sup>(1)</sup> – As Required per AWS A5.28/A5.28M: 2005

	Yield Strength <sup>(2)</sup> MPa (ksi)	Tensile Strength MPa (ksi)	Elongation %	Charpy V-Notch J (ft•lbf)	
				@ -29°C (-20°F)	@ -50°C (-58°F)
<b>Requirements</b> AWS ER80S-G As-Welded with 100% CO <sub>2</sub>	Not Specified	550 (80) min.	Not Specified	Not Specified	Not Specified
<b>Typical Performance<sup>(3)</sup></b> As-Welded 100% CO <sub>2</sub> 80% Ar/20% CO <sub>2</sub>	585 - 620 (85 - 90) 620 - 690 (90 - 100)	620 - 690 (90 - 100) 690 - 760 (100 - 110)	22 - 24 20 - 24	27 - 54 (20 - 40) 110 - 150 (80 - 110)	69 - 95 (51 - 70) 34 - 61 (25 - 45)

## WIRE COMPOSITION – As Required per AWS A5.28/A5.28M: 2005

	%C	%Mn	%Si	%Ni <sup>(4)</sup>	%Ti	%S
<b>Requirements</b> AWS ER80S-G <sup>(4)</sup> EN ISO 14341-A-G 3Ni1	Not Specified 0.06 - 0.14	Not Specified 1.00 - 1.60	Not Specified 0.50 - 0.90	≥0.50 0.80 - 1.50	Not Specified ≤0.15	Not Specified ≤0.020
<b>Typical Performance<sup>(3)</sup></b>	0.07 - 0.08	1.50 - 1.60	0.65 - 0.75	0.85 - 0.95	≤0.10	≤0.015
	%P	%Cu	%Cr	%Mo	%V	%Al
<b>Requirements</b> AWS ER80S-G EN ISO 14341-A-G 3Ni1	Not Specified ≤0.020	Not Specified ≤0.35	Not Specified ≤0.15	Not Specified ≤0.15	Not Specified ≤0.03	Not Specified ≤0.02
<b>Typical Performance<sup>(3)</sup></b>	≤0.015	≤0.20	≤0.05	≤0.01	≤0.01	≤0.01

## TYPICAL OPERATING PROCEDURES

Diameter, Polarity Shielding Gas	CTWD <sup>(5)</sup> mm (in)	Wire Feed Speed m/min (in/min)	Voltage (volts)	Approx. Current (amps)	Melt-Off Rate kg/hr (lb/hr)
1.0 mm (0.040 in), DC+ 75-95% Ar/Balance CO <sub>2</sub>	12-19 (1/2-3/4)	2.5-14.0 (100-550)	19-31	105-320	1.0-5.2 (2.1-11.5)
1.2 mm (0.047 in), DC+ 75-95% Ar/Balance CO <sub>2</sub>	12-19 (1/2-3/4)	3.2-12.7 (125-500)	19-31	145-360	1.7-6.5 (3.7-14.3)

<sup>(1)</sup>Typical all weld metal. <sup>(2)</sup>Measured with 0.2% offset. <sup>(3)</sup>See test results disclaimer on pg. 9. <sup>(4)</sup>To meet the ER80S-G classification, weld deposit must have minimum of 1 or more of the following: 0.50% Ni, 0.30% Cr or 0.20% Mo. <sup>(5)</sup>For Electrical Stickout (ESO) subtract 6.4 mm (0.25 in.) from CTWD. <sup>(6)</sup>For 100% CO<sub>2</sub> shielding gas add 1 - 2 volts to recommended procedures.

# Lincoln® ER70S-2

## Mild Steel Cut Length AWS ER70S-2

### Key Features

- ▶ Contains zirconium, titanium, and aluminum in addition to silicon and manganese
- ▶ Produces x-ray quality welds over most surface conditions
- ▶ Recommended for TIG welding on all grades of steel
- ▶ Embossed on each end for easy alloy identification

### Typical Applications

- ▶ Repairs on a variety of mild and low alloy steel
- ▶ Small diameter pipe and tubing
- ▶ Sheet metal applications
- ▶ Root pass pipe welding

### Conformances

AWS A5.18/A5.18M: 2005 ER70S-2  
ASME SFA-A5.18: ER70S-2

### Welding Positions

All

### DIAMETERS / PACKAGING

Diameter in (mm)	5 lb (2.3 kg) Plastic Tube 20 lb (9.1 kg) Carton	10 lb (4.5 kg) Carton	50 lb (22.7 kg) Carton
1/16 (1.6)	ED025880	ED025439	ED026649
3/32 (1.8)	ED025881	ED025442	ED026650
1/8 (3.2)	ED025882	ED025445	ED026651

### WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%S	%Si	%P	%Cu	%Cr
<b>Requirements</b> AWS ER70S-2	0.07 max.	0.90 - 1.40	0.035 max.	0.40 - 0.70	0.0025 max.	0.50 max.	(1)
<b>Test Results<sup>(2)</sup></b>	0.04	1.08	0.005	0.55	0.0003	0.20	0.08
	%Ni	%Mo	%V	%Al	%Ti	%Zr	
<b>Requirements</b> AWS ER70S-2	(1)	(1)	(1)	0.05 - 0.15	0.05 - 0.15	0.02 - 0.12	
<b>Test Results<sup>(2)</sup></b>	0.08	0.08	< 0.002	0.08	0.10	0.07	

<sup>(1)</sup>Total 0.50% maximum, combined. <sup>(2)</sup>See test results disclaimer on pg. 9.

# Lincoln® ER70S-6

## Mild Steel Cut Length

AWS ER70S-6

### Key Features

- ▶ High levels of silicon and manganese for use on slightly contaminated base materials
- ▶ Better puddle fluidity
- ▶ Excellent wetting action
- ▶ Embossed on each end for easy alloy identification

### Welding Positions

All

### Typical Applications

- ▶ Repairs on a variety of mild and low alloy steel
- ▶ Small diameter pipe and tubing
- ▶ Sheet metal applications
- ▶ Root pass pipe welding

### Conformances

AWS A5.18/A5.18M: 2005 ER70S-6  
ASME SFA-A5.18: ER70S-6

### DIAMETERS / PACKAGING

Diameter in (mm)	5 lb (2.3 kg) Plastic Tube 20 lb (9.1 kg) Carton	10 lb (4.5 kg) Carton	50 lb (22.7 kg) Carton
1/16 (1.6)	ED025877	ED025448	ED026652
3/32 (1.8)	ED025878	ED025451	ED026653
1/8 (3.2)	ED025879	ED025454	ED026654

### WIRE COMPOSITION – As Required per AWS A5.18/A5.18M: 2005

	%C	%Mn	%S	%Si	%P
<b>Requirements</b> AWS ER70S-6	0.06 - 0.15	1.40 - 1.85	0.035 max.	0.80 - 1.15	0.025 max.
<b>Test Results<sup>(2)</sup></b>	0.09	1.63	0.007	0.90	0.007
	%Cu	%Cr	%Ni	%Mo	%V
<b>Requirements</b> AWS ER70S-6	0.50 max.	(1)	(1)	(1)	(1)
<b>Test Results<sup>(2)</sup></b>	0.20	0.05	0.05	0.05	0.05

<sup>(1)</sup>Total 0.50% maximum, combined. <sup>(2)</sup>See test results disclaimer on pg. 9.