

Coreweld 80-D2

Coreweld 80-D2 is a metal cored wire equivalent to ER80S-D2 solid wire. Coreweld 80-D2 produces higher deposition rates, better wetting action, with an absence of copper coating on the wire. Coreweld 80-D2 was developed for HSLA steels. This product is capable of single or multiple pass welding.

Specifications

Classifications	ASME SFA 5.36 AWS A5.36 : E80T15_M21A2-G3 ASME SFA 5.28 AWS A5.28 : E80C-G H4
Industry	Process Mobile Equipment Industrial and General Fabrication Automotive

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation	Reduction in Area
75% Ar - 25% CO₂				
Stress Relieved 8 hour(s) 635 °C (1175 °F)	530 MPa (77 ksi)	620 MPa (90 ksi)	26 %	68 %
As Welded	530 MPa (77 ksi)	620 MPa (90 ksi)	26 %	62 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO₂		
As Welded	-40 °C (-40 °F)	31 J (23 ft-lb)
As Welded	-29 °C (-20 °F)	46 J (34 ft-lb)
Stress Relieved	-29 °C (-20 °F)	34 J (25 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P	Mo
75% Ar - 25% CO₂					
0.09	1.6	0.5	0.01	0.01	0.5

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	Deposition Type	TTW Dist.	Deposition Rate
75% Ar - 25% CO₂							
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm /min (262-328 in. /min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.4 mm (.052 in.)	190 A	26 V	440 cm/min (180 in./min)	94 %		15.8 mm (5/8 in.)	2.5 kg/h (5.5 lbs/h)
1.6 mm (1/16 in.)	510 A	36 V	1210 cm/min (480 in./min)	99 %		19.1 mm (3/4 in.)	9.4 kg/h (20.7 lbs/h)
1.6 mm (1/16 in.)	290 A	26 V	510 cm/min (200 in./min)	95 %		19.1 mm (3/4 in.)	4.0 kg/h (8.8 lbs/h)
1.6 mm (1/16 in.)	230 A	24 V	380 cm/min (150 in./min)	91 %		19.1 mm (3/4 in.)	2.8 kg/h (6.2 lbs/h)
1.6 mm (1/16 in.)	370 A	28 V	700 cm/min (280 in./min)	96 %		19.1 mm (3/4 in.)	5.7 kg/h (12.5 lbs/h)
1.6 mm (1/16 in.)	430 A	29 V	890 cm/min (350 in./min)	99 %		19.1 mm (3/4 in.)	7.2 kg/h (15.9 lbs/h)

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Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	Deposition Type	TTW Dist.	Deposition Rate
1.2 mm (.045 in.)	260 A	28 V	890 cm/min (350 in./min)	97 %		15.8 mm (5/8 in.)	4.1 kg/h (9.1 lbs/h)
1.2 mm (.045 in.)	330 A	32 V	1270 cm/min (500 in./min)	99 %		15.8 mm (5/8 in.)	5.8 kg/h (12.7 lbs/h)
0.9 mm (.035 in.)	130-260 A	23-29 V	813-1727 cm/min (320-680 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.4 mm (.052 in.)	310 A	27 V	890 cm/min (350 in./min)	98 %		15.8 mm (5/8 in.)	4.9 kg/h (10.7 lbs/h)
1.6 mm (1/16 in.)	430 A	32 V	890 cm/min (350 in./min)	99 %		19.1 mm (3/4 in.)	7.2 kg/h (15.9 lbs/h)
1.4 mm (.052 in.)	410 A	36 V	1330 cm/min (530 in./min)	99 %		15.8 mm (5/8 in.)	7.1 kg/h (15.7 lbs/h)
1.2 mm (.045 in.)	290 A	29 V	1020 cm/min (400 in./min)	98 %		15.8 mm (5/8 in.)	4.6 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	360 A	33 V	1400 cm/min (550 in./min)	99 %		15.8 mm (5/8 in.)	6.3 kg/h (13.9 lbs/h)
1.2 mm (.045 in.)	170 A	24 V	510 cm/min (200 in./min)	94 %		15.8 mm (5/8 in.)	2.4 kg/h (5.2 lbs/h)
1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.0 kg/h (6.5 lbs/h)
1.2 mm (.045 in.)	390 A	32 V	1650 cm/min (650 in./min)	99 %		15.8 mm (5/8 in.)	7.5 kg/h (16.5 lbs/h)
1.4 mm (.052 in.)	240 A	25 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)
1.2 mm (.045 in.)	150-350 A	24-32 V	838-1453 cm/min (330-572 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.6 mm (1/16 in.)	340 A	29 V	640 cm/min (250 in./min)	98 %		19.1 mm (3/4 in.)	5.6 kg/h (12.3 lbs/h)
1.6 mm (1/16 in.)	510 A	33 V	1210 cm/min (480 in./min)	99 %		19.1 mm (3/4 in.)	9.4 kg/h (20.7 lbs/h)
1.4 mm (.052 in.)	340 A	31 V	1020 cm/min (400 in./min)	99 %		15.8 mm (5/8 in.)	5.1 kg/h (11.2 lbs/h)
1.4 mm (.052 in.)	240 A	27 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)
1.2 mm (.045 in.)	330 A	29 V	1270 cm/min (500 in./min)	99 %		15.8 mm (5/8 in.)	5.8 kg/h (12.7 lbs/h)
1.6 mm (1/16 in.)	290 A	27 V	510 cm/min (200 in./min)	95 %		19.1 mm (3/4 in.)	4.0 kg/h (8.8 lbs/h)
1.2 mm (.045 in.)	290 A	27 V	1020 cm/min (400 in./min)	98 %		15.8 mm (5/8 in.)	4.6 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	230 A	25 V	760 cm/min (300 in./min)	96 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)
1.4 mm (.052 in.)	420 A	32 V	1400 cm/min (550 in./min)	99 %		15.8 mm (5/8 in.)	7.5 kg/h (16.6 lbs/h)
1.6 mm (1/16 in.)	300-500 A	26-34 V	460-846 cm/min (181-333 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	

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Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Efficiency (%)	Deposition Type	TTW Dist.	Deposition Rate
1.4 mm (.052 in.)	370 A	30 V	1140 cm/min (450 in./min)	99 %		15.8 mm (5/8 in.)	6.2 kg/h (13.6 lbs/h)
1.4 mm (.052 in.)	190 A	24 V	440 cm/min (180 in./min)	94 %		15.8 mm (5/8 in.)	2.5 kg/h (5.5 lbs/h)
1.4 mm (.052 in.)	280 A	28 V	760 cm/min (300 in./min)	97 %		15.8 mm (5/8 in.)	4.2 kg/h (9.2 lbs/h)
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	91 %		19.1 mm (3/4 in.)	2.8 kg/h (6.2 lbs/h)
90% Ar - 10% CO2							
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm/min (262-328 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.4 mm (.052 in.)	190 A	26 V	440 cm/min (180 in./min)	94 %		15.8 mm (5/8 in.)	2.5 kg/h (5.5 lbs/h)
1.6 mm (1/16 in.)	510 A	36 V	1210 cm/min (480 in./min)	99 %		19.1 mm (3/4 in.)	9.4 kg/h (20.7 lbs/h)
1.6 mm (1/16 in.)	290 A	26 V	510 cm/min (200 in./min)	95 %		19.1 mm (3/4 in.)	4.0 kg/h (8.8 lbs/h)
1.6 mm (1/16 in.)	230 A	24 V	380 cm/min (150 in./min)	91 %		19.1 mm (3/4 in.)	2.8 kg/h (6.2 lbs/h)
1.6 mm (1/16 in.)	370 A	28 V	700 cm/min (280 in./min)	96 %		19.1 mm (3/4 in.)	5.7 kg/h (12.5 lbs/h)
1.6 mm (1/16 in.)	430 A	29 V	890 cm/min (350 in./min)	99 %		19.1 mm (3/4 in.)	7.2 kg/h (15.9 lbs/h)
1.2 mm (.045 in.)	260 A	28 V	890 cm/min (350 in./min)	97 %		15.8 mm (5/8 in.)	4.1 kg/h (9.1 lbs/h)
1.2 mm (.045 in.)	330 A	32 V	1270 cm/min (500 in./min)	99 %		15.8 mm (5/8 in.)	5.8 kg/h (12.7 lbs/h)
0.9 mm (.035 in.)	130-260 A	23-29 V	813-1727 cm/min (320-680 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.4 mm (.052 in.)	310 A	27 V	890 cm/min (350 in./min)	98 %		15.8 mm (5/8 in.)	4.9 kg/h (10.7 lbs/h)
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1.4 mm (.052 in.)	410 A	36 V	1330 cm/min (530 in./min)	99 %		15.8 mm (5/8 in.)	7.1 kg/h (15.7 lbs/h)
1.2 mm (.045 in.)	290 A	29 V	1020 cm/min (400 in./min)	98 %		15.8 mm (5/8 in.)	4.6 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	360 A	33 V	1400 cm/min (550 in./min)	99 %		15.8 mm (5/8 in.)	6.3 kg/h (13.9 lbs/h)
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1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.0 kg/h (6.5 lbs/h)
1.2 mm (.045 in.)	390 A	32 V	1650 cm/min (650 in./min)	99 %		15.8 mm (5/8 in.)	7.5 kg/h (16.5 lbs/h)
1.4 mm (.052 in.)	240 A	25 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)

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1.6 mm (1/16 in.)	340 A	29 V	640 cm/min (250 in./min)	98 %		19.1 mm (3/4 in.)	5.6 kg/h (12.3 lbs/h)
1.6 mm (1/16 in.)	510 A	33 V	1210 cm/min (480 in./min)	99 %		19.1 mm (3/4 in.)	9.4 kg/h (20.7 lbs/h)
1.4 mm (.052 in.)	340 A	31 V	1020 cm/min (400 in./min)	99 %		15.8 mm (5/8 in.)	5.1 kg/h (11.2 lbs/h)
1.4 mm (.052 in.)	240 A	27 V	640 cm/min (250 in./min)	95 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)
1.2 mm (.045 in.)	330 A	29 V	1270 cm/min (500 in./min)	99 %		15.8 mm (5/8 in.)	5.8 kg/h (12.7 lbs/h)
1.6 mm (1/16 in.)	290 A	27 V	510 cm/min (200 in./min)	95 %		19.1 mm (3/4 in.)	4.0 kg/h (8.8 lbs/h)
1.2 mm (.045 in.)	290 A	27 V	1020 cm/min (400 in./min)	98 %		15.8 mm (5/8 in.)	4.6 kg/h (10.2 lbs/h)
1.2 mm (.045 in.)	230 A	25 V	760 cm/min (300 in./min)	96 %		15.8 mm (5/8 in.)	3.5 kg/h (7.7 lbs/h)
1.4 mm (.052 in.)	420 A	32 V	1400 cm/min (550 in./min)	99 %		15.8 mm (5/8 in.)	7.5 kg/h (16.6 lbs/h)
1.6 mm (1/16 in.)	300-500 A	26-34 V	460-846 cm/min (181-333 in./min)		Full Range	9.5-19.1 mm (3/8-3/4 in.)	
1.4 mm (.052 in.)	370 A	30 V	1140 cm/min (450 in./min)	99 %		15.8 mm (5/8 in.)	6.2 kg/h (13.6 lbs/h)
1.4 mm (.052 in.)	190 A	24 V	440 cm/min (180 in./min)	94 %		15.8 mm (5/8 in.)	2.5 kg/h (5.5 lbs/h)
1.4 mm (.052 in.)	280 A	28 V	760 cm/min (300 in./min)	97 %		15.8 mm (5/8 in.)	4.2 kg/h (9.2 lbs/h)
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	91 %		19.1 mm (3/4 in.)	2.8 kg/h (6.2 lbs/h)

Recommended Welding Parameters

Current	Wire Diameter	TTW Dist.	Voltage	Wire Feed Speed
75% Ar - 25% CO₂				
150-350 A	1.2 mm (.045 in.)	9.5-19.1 mm (3/8-3/4 in.)	24-32 V	838-1453 cm/min (330-572 in./min)
200-400 A	1.4 mm (.052 in.)	9.5-19.1 mm (3/8-3/4 in.)	26-32 V	665.5-833 cm/min (262-328 in./min)
300-500 A	1.6 mm (1/16 in.)	9.5-19.1 mm (3/8-3/4 in.)	26-34 V	460-846 cm/min (181-333 in./min)
130-260 A	0.9 mm (.035 in.)	9.5-19.1 mm (3/8-3/4 in.)	23-29 V	813-1727 cm/min (320-680 in./min)