

Coreweld 70

Coreweld 70 is a tubular wire containing ingredients primarily comprised of metal powder along with additional arc stabilizers and alloying elements. The net result is a high efficiency (90 to 98%) wire. Arc characteristics, weld metal transfer, spatter levels are improved, while silica islands are minimized with the use of Argon mixtures up to 92% Argon. Due to the high level of iron powder and low slag components, the only slag formed by this wire are small islands of silica. Coreweld 70 was designed for multipass welding in robotic applications where slag removal between passes is difficult. This metal cored product is intended for use on carbon steels having tensile strengths up to 70 ksi (485 MPa). Coreweld 70 wires from .045" up to 1/16" are capable of being welded out-of-position.

Classifications	AWS A5.36 : E70T15-M20A2-CS1-H4 AWS A5.36 : E70T15-M21A2-CS1-H4 AWS A5.18 : E70C-6M-H4
Approvals	CWB : CSA W48 E491C-6M-H4 DB
Industry	Automotive Mobile Equipment Industrial and General Fabrication Power Generation Bridge Construction Civil Construction Pipeline Ship/Barge Building Railcars

Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation	Reduction in Area
75% Ar - 25% CO₂				
As Welded	460 MPa (68 ksi)	550 MPa (80 ksi)	28 %	67 %
92% Ar - 8% CO₂				
As Welded	545 MPa (79 ksi)	585 MPa (85 ksi)	26 %	65 %

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO₂		
As Welded	-29 °C (-20 °F)	54 J (40 ft-lb)
As Welded	-18 °C (0 °F)	68 J (50 ft-lb)
92% Ar - 8% CO₂		
As Welded	-18 °C (0 °F)	81 J (60 ft-lb)
As Welded	-29 °C (-20 °F)	68 J (50 ft-lb)

Typical Weld Metal Analysis %

C	Mn	Si	S	P
75% Ar - 25% CO₂				
0.06	1.4	0.6	0.019	0.010
92% Ar - 8% CO₂				
0.06	1.5	0.6	0.019	0.009

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Efficiency (%)	Deposition Rate
0.9 mm (.035 in.)	200 A	27 V	1199 cm/min (472 in./min)	92 %	3.0 kg/h (6.5 lbs/h)

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Deposition Data					
Diameter	Current	Voltage	Wire Feed Speed	Efficiency (%)	Deposition Rate
0.9 mm (.035 in.)	250 A	29 V	1727 cm/min (680 in./min)	92 %	4.3 kg/h (9.4 lbs/h)
1.2 mm (.045 in.)	250 A	28 V	838 cm/min (330 in./min)	90 %	3.6 kg/h (8.0 lbs/h)
1.2 mm (.045 in.)	275 A	30 V	1092 cm/min (430 in./min)	94 %	5.0 kg/h (11.1 lbs/h)
1.2 mm (.045 in.)	300 A	32 V	1179 cm/min (464 in./min)	94 %	5.3 kg/h (11.6 lbs/h)
1.2 mm (.045 in.)	350 A	32 V	1300 cm/min (512 in./min)	96 %	5.8 kg/h (12.7 lbs/h)
1.4 mm (.052 in.)	275 A	29 V	665 cm/min (262 in./min)	92 %	3.4 kg/h (8.0 lbs/h)
1.4 mm (.052 in.)	300 A	29 V	792 cm/min (312 in./min)	93 %	4.4 kg/h (9.6 lbs/h)
1.4 mm (.052 in.)	325 A	30 V	833 cm/min (328 in./min)	93 %	4.6 kg/h (10.1 lbs/h)
1.6 mm (1/16 in.)	300 A	30 V	460 cm/min (181 in./min)	89 %	3.9 kg/h (8.6 lbs/h)
1.6 mm (1/16 in.)	350 A	30 V	612 cm/min (241 in./min)	94 %	5.4 kg/h (11.9 lbs/h)
1.6 mm (1/16 in.)	400 A	32 V	744 cm/min (293 in./min)	94 %	6.6 kg/h (14.6 lbs/h)
1.6 mm (1/16 in.)	450 A	34 V	846 cm/min (333 in./min)	94 %	7.4 kg/h (16.2 lbs/h)
2.4 mm (3/32 in.)	400 A	31 V	292 cm/min (115 in./min)	95 %	5.2 kg/h (11.5 lbs/h)
2.4 mm (3/32 in.)	450 A	31 V	350 cm/min (138 in./min)	97 %	6.6 kg/h (14.5 lbs/h)
2.4 mm (3/32 in.)	500 A	32 V	394 cm/min (155 in./min)	97 %	7.5 kg/h (16.5 lbs/h)
2.4 mm (3/32 in.)	550 A	32 V	500 cm/min (197 in./min)	98 %	9.5 kg/h (21.0 lbs/h)
2.0 mm (5/64 in.)	350 A	27 V	406 cm/min (160 in./min)	94 %	5.3 kg/h (11.6 lbs/h)
2.0 mm (5/64 in.)	400 A	28 V	470 cm/min (185 in./min)	95 %	6.0 kg/h (13.2 lbs/h)
2.0 mm (5/64 in.)	450 A	28 V	533 cm/min (210 in./min)	97 %	7.2 kg/h (15.8 lbs/h)
2.0 mm (5/64 in.)	500 A	29 V	711 cm/min (280 in./min)	97 %	9.3 kg/h (20.4 lbs/h)

Recommended Welding Parameters				
Current	Wire Diameter	TTW Dist.	Voltage	Wire Feed Speed
75% Ar - 25% CO₂				
400-580 A	2.0 mm (5/64 in.)	19-31.75 mm (3/4-1.25 in.)	28-34 V	292-500 cm/min (115-197 in./min)

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Recommended Welding Parameters

Current	Wire Diameter	TTW Dist.	Voltage	Wire Feed Speed
130-260 A	0.9 mm (.035 in.)	9.5-19 mm (3/8-3/4 in.)	23-29 V	813-1727 cm/min (320-680 in./min)
300-500 A	1.6 mm (1/16 in.)	9.5-19 mm (3/8-3/4 in.)	26-34 V	460-846 cm/min (181-333 in./min)
200-400 A	1.4 mm (.052 in.)	9.5-19 mm (3/8-3/4 in.)	26-32 V	665.5-833 cm/min (262-328 in./min)
150-350 A	1.2 mm (.045 in.)	9.5-19 mm (3/8-3/4 in.)	24-32 V	838-1453 cm/min (330-572 in./min)
350-550 A	2.4 mm (3/32 in.)	19-31.75 mm (3/4-1.25 in.)	27-33 V	406-711 cm/min (160-280 in./min)