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

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

Typical Tensile Properties

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

Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO2		
As Welded	-18 °C (0 °F)	68 J (50 ft-lb)
As Welded	-29 °C (-20 °F)	54 J (40 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
0.06	1.5	0.6	0.019	0.009

Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Deposition Efficiency %
1.6 mm (1/16 in.)	350 A	30 V	612 cm/min (241 in./min)	5.4 kg/h (11.9 lb/h)	94 %
1.6 mm (1/16 in.)	400 A	32 V	744 cm/min (293 in./min)	6.6 kg/h (14.6 lb/h)	94 %
1.6 mm (1/16 in.)	450 A	34 V	846 cm/min (333 in./min)	7.4 kg/h (16.2 lb/h)	94 %
2.4 mm (3/32 in.)	400 A	31 V	292 cm/min (115 in./min)	5.2 kg/h (11.5 lb/h)	95 %
2.4 mm (3/32 in.)	450 A	31 V	350 cm/min (138 in./min)	6.6 kg/h (14.5 lb/h)	97 %
2.4 mm (3/32 in.)	500 A	32 V	394 cm/min (155 in./min)	7.5 kg/h (16.5 lb/h)	97 %
2.4 mm (3/32 in.)	550 A	32 V	500 cm/min (197 in./min)	9.5 kg/h (21.0 lb/h)	98 %
2.0 mm (5/64 in.)	350 A	27 V	406 cm/min (160 in./min)	5.3 kg/h (11.6 lb/h)	94 %
2.0 mm (5/64 in.)	400 A	28 V	470 cm/min (185 in./min)	6.0 kg/h (13.2 lb/h)	95 %

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Deposition Data					
Diameter	**Current**	**Voltage**	**Wire Feed Speed**	**Deposition Rate**	**Deposition Efficiency %**
2.0 mm (5/64 in.)	450 A	28 V	533 cm/min (210 in./min)	7.2 kg/h (15.8 lb/h)	97 %
2.0 mm (5/64 in.)	500 A	29 V	711 cm/min (280 in./min)	9.3 kg/h (20.4 lb/h)	97 %
0.9 mm (.035 in.)	200 A	27 V	1199 cm/min (472 in./min)	3.0 kg/h (6.5 lb/h)	92 %
0.9 mm (.035 in.)	250 A	29 V	1727 cm/min (680 in./min)	4.3 kg/h (9.4 lb/h)	92 %
1.2 mm (.045 in.)	250 A	28 V	838 cm/min (330 in./min)	3.6 kg/h (8.0 lb/h)	90 %
1.2 mm (.045 in.)	275 A	30 V	1092 cm/min (430 in./min)	5.0 kg/h (11.1 lb/h)	94 %
1.2 mm (.045 in.)	300 A	32 V	1179 cm/min (464 in./min)	5.3 kg/h (11.6 lb/h)	94 %
1.2 mm (.045 in.)	350 A	32 V	1300 cm/min (512 in./min)	5.8 kg/h (12.7 lb/h)	96 %
1.4 mm (.052 in.)	275 A	29 V	665 cm/min (262 in./min)	3.4 kg/h (8.0 lb/h)	92 %
1.4 mm (.052 in.)	300 A	29 V	792 cm/min (312 in./min)	4.4 kg/h (9.6 lb/h)	93 %
1.4 mm (.052 in.)	325 A	30 V	833 cm/min (328 in./min)	4.6 kg/h (10.1 lb/h)	93 %
1.6 mm (1/16 in.)	300 A	30 V	460 cm/min (181 in./min)	3.9 kg/h (8.6 lb/h)	89 %

Recommended Welding Parameters				
Wire Diameter	**Current**	**Voltage**	**TTW Dist.**	**Wire Feed Speed**
75% Ar - 25% CO2				
0.9 mm (.035 in.)	130-260 A	23-29 V	9.5-19 mm (3/8-3/4 in.)	813-1727 cm/min (320-680 in./min)
1.2 mm (.045 in.)	150-350 A	24-32 V	9.5-19 mm (3/8-3/4 in.)	838-1453 cm/min (330-572 in./min)
1.4 mm (.052 in.)	200-400 A	26-32 V	9.5-19 mm (3/8-3/4 in.)	665.5-833 cm/min (262-328 in./min)
1.6 mm (1/16 in.)	300-500 A	26-34 V	9.5-19 mm (3/8-3/4 in.)	460-846 cm/min (181-333 in./min)
2.4 mm (3/32 in.)	350-550 A	27-33 V	19-31.75 mm (3/4-1.25 in.)	406-711 cm/min (160-280 in./min)
2.0 mm (5/64 in.)	400-580 A	28-34 V	19-31.75 mm (3/4-1.25 in.)	292-500 cm/min (115-197 in./min)

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