

# Coreweld C6

Coreweld C6 was developed and “fine-tuned” especially for hand-held, automatic and robotic welding in the automotive industry, as well as rail car manufacturing, structural welding and other similar applications. Never before has there been such a perfect pairing of filler metal and industry requirements for quality, productivity and profitability.

<b>Classifications:</b>	AWS A5.18:E70C-6MD H4, AWS A5.36:E70T15-M20A2-CS1-H4, AWS A5.36:E70T15-M21A4-CS1-H4, ASME SFA 5.18, ASME SFA 5.36
<b>Approvals:</b>	ABS , CWB CSA W48 E491C-6M-H4
<b>Industry or Segmentation:</b>	Mobile Equipment, Railcars, Industrial and General Fabrication, Bridge Construction, Civil Construction, Automotive, 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
<b>75% Ar - 25% CO2</b>				
As Welded	505 MPa (74 ksi)	595 MPa (86 ksi)	64 %	27 %
<b>90% Ar - 10% CO2</b>				
As Welded	545 MPa (79 ksi)	595 MPa (86 ksi)	63 %	25 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO2</b>		
As Welded	-29 °C (-20 °F)	76 J (56 ft-lb)
As Welded	-40 °C (-40 °F)	58 J (43 ft-lb)
<b>90% Ar - 10% CO2</b>		
As Welded	-29 °C (-20 °F)	78 J (56 ft-lb)

Typical Weld Metal Analysis %				
C	Mn	Si	S	P
<b>75% Ar - 25% CO2</b>				
0.04	1.6	0.7	0.016	0.012
<b>90% Ar - 10% CO2</b>				
0.04	1.6	0.8	0.017	0.015

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Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
<b>75% Ar - 25% CO<sub>2</sub></b>						
1.2 mm (.045 in.)	170 A	24 V	510 cm/min (200 in./min)	2.4 kg/h (5.2 lb/h)	16 mm (5/8 in.)	94 %
1.2 mm (.045 in.)	230 A	25 V	760 cm/min (300 in./min)	3.5 kg/h (7.7 lb/h)	16 mm (5/8 in.)	96 %
1.2 mm (.045 in.)	290 A	27 V	1020 cm/min (400 in./min)	4.6 kg/h (10.2 lb/h)	16 mm (5/8 in.)	98 %
1.2 mm (.045 in.)	330 A	29 V	1270 cm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	16 mm (5/8 in.)	99 %
1.2 mm (.045 in.)	390 A	32 V	1650 cm/min (650 in./min)	7.5 kg/h (16.5 lb/h)	16 mm (5/8 in.)	99 %
1.4 mm (.052 in.)	190 A	24 V	440 cm/min (180 in./min)	2.5 kg/h (5.5 lb/h)	16 mm (5/8 in.)	94 %
1.4 mm (.052 in.)	240 A	25 V	640 cm/min (250 in./min)	3.5 kg/h (7.7 lb/h)	16 mm (5/8 in.)	95 %
1.4 mm (.052 in.)	310 A	27 V	890 cm/min (350 in./min)	4.9 kg/h (10.7 lb/h)	16 mm (5/8 in.)	98 %
1.4 mm (.052 in.)	370 A	30 V	1140 cm/min (450 in./min)	6.2 kg/h (13.6 lb/h)	16 mm (5/8 in.)	99 %
1.4 mm (.052 in.)	420 A	32 V	1400 cm/min (550 in./min)	7.5 kg/h (16.6 lb/h)	16 mm (5/8 in.)	99 %
1.6 mm (1/16 in.)	230 A	24 V	380 cm/min (150 in./min)	2.81 kg/h (6.2 lb/h)	19 mm (3/4 in.)	91 %
1.6 mm (1/16 in.)	290 A	26 V	510 cm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	19 mm (3/4 in.)	95 %
1.6 mm (1/16 in.)	370 A	28 V	700 cm/min (280 in./min)	5.7 kg/h (12.5 lb/h)	19 mm (3/4 in.)	96 %
1.6 mm (1/16 in.)	430 A	29 V	890 cm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	19 mm (3/4 in.)	99 %
1.6 mm (1/16 in.)	510 A	33 V	1210 cm/min (480 in./min)	9.4 kg/h (20.7 lb/h)	19 mm (3/4 in.)	99 %

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
<b>90% Ar - 10% CO<sub>2</sub></b>						
1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	3.0 kg/h (6.5 lb/h)	16 mm (5/8 in.)	95 %
1.2 mm (.045 in.)	260 A	28 V	890 cm/min (350 in./min)	4.1 kg/h (9.1 lb/h)	16 mm (5/8 in.)	97 %
1.2 mm (.045 in.)	290 A	29 V	1020 cm/min (400 in./min)	4.6 kg/h (10.2 lb/h)	16 mm (5/8 in.)	98 %
1.2 mm (.045 in.)	330 A	32 V	1270 cm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	16 mm (5/8 in.)	99 %
1.2 mm (.045 in.)	330 A	32 V	1270 mm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	16 mm (5/8 in.)	99 %
1.2 mm (.045 in.)	360 A	33 V	1400 cm/min (550 in./min)	6.3 kg/h (13.9 lb/h)	16 mm (5/8 in.)	99 %
1.4 mm (.052 in.)	190 A	26 V	440 cm/min (180 in./min)	2.5 kg/h (5.5 lb/h)	16 mm (5/8 in.)	94 %
1.4 mm (.052 in.)	240 A	27 V	640 cm/min (250 in./min)	3.5 kg/h (7.7 lb/h)	16 mm (5/8 in.)	95 %
1.4 mm (.052 in.)	280 A	28 V	760 cm/min (300 in./min)	4.2 kg/h (9.2 lb/h)	16 mm (5/8 in.)	97 %
1.4 mm (.052 in.)	340 A	31 V	1020 cm/min (400 in./min)	5.1 kg/h (11.2 lb/h)	16 mm (5/8 in.)	99 %
1.4 mm (.052 in.)	410 A	36 V	1330 cm/min (530 in./min)	7.1 kg/h (15.7 lb/h)	16 mm (5/8 in.)	99 %
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	2.81 kg/h (6.2 lb/h)	19 mm (3/4 in.)	91 %
1.6 mm (1/16 in.)	290 A	27 V	510 cm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	19 mm (3/4 in.)	95 %
1.6 mm (1/16 in.)	340 A	29 V	640 cm/min (250 in./min)	5.6 kg/h (12.3 lb/h)	19 mm (3/4 in.)	98 %
1.6 mm (1/16 in.)	430 A	32 V	890 cm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	19 mm (3/4 in.)	99 %
1.6 mm (1/16 in.)	510 A	36 V	1210 cm/min (480 in./min)	9.4 kg/h (20.7 lb/h)	19 mm (3/4 in.)	99 %

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Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
<b>75% Ar - 25% CO2</b>				
1.2 mm (.045 in.)	200-260 A	27-28 V	635-889 cm/min (250-350 in./min)	16 mm (5/8 in.)
1.2 mm (.045 in.)	260-310 A	28-30 V	889-1143 cm/min (350-450 in./min)	16 mm (5/8 in.)
1.2 mm (.045 in.)	310-360 A	30-33 V	1143-1397 cm/min (450-550 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	190-280 A	29-28 V	457-762 cm/min (180-300 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	280-340 A	28-31 V	762-1016 cm/min (300-400 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	340-410 A	31-36 V	1016-1346 cm/min (400-530 in./min)	16 mm (5/8 in.)
1.6 mm (1/16 in.)	230-340 A	26-29 V	381-635 cm/min (150-250 in./min)	19 mm (3/4 in.)
1.6 mm (1/16 in.)	340-430 A	29-32 V	635-889 cm/min (250-350 in./min)	19 mm (3/4 in.)
1.6 mm (1/16 in.)	430-510 A	32-36 V	889-1219 cm/min (350-480 in./min)	19 mm (3/4 in.)
<b>90% Ar - 10% CO2</b>				
1.2 mm (.045 in.)	170-260 A	24-26 V	508-889 cm/min (200-350 in./min)	16 mm (5/8 in.)
1.2 mm (.045 in.)	260-330 A	26-29 V	889-1270 cm/min (350-500 in./min)	16 mm (5/8 in.)
1.2 mm (.045 in.)	330-390 A	29-32 V	1270-1651 cm/min (500-650 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	190-310 A	24-27 V	457-889 cm/min (180-350 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	310-370 A	27-30 V	889-1143 cm/min (350-450 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	370-420 A	30-32 V	1143-1397 cm/min (450-550 in./min)	16 mm (5/8 in.)
1.6 mm (1/16 in.)	230-370 A	24-28 V	381-711 cm/min (150-280 in./min)	19 mm (3/4 in.)
1.6 mm (1/16 in.)	370-430 A	28-30 V	711-889 cm/min (280-350 in./min)	19 mm (3/4 in.)
1.6 mm (1/16 in.)	430-510 A	30-33 V	889-1219 cm/min (350-480 in./min)	19 mm (3/4 in.)