



# COREWELD<sup>®</sup> METAL-CORED WIRES



**FOR FASTER, CLEANER, MORE EFFICIENT WELDING.**





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# COREWELD

## PREMIUM METAL-CORED WIRES.

**ESAB Coreweld metal-cored wires were developed to meet the needs of demanding applications such as structural steel construction, heavy equipment, transportation, bridges, petrochemical processing, offshore rigs, railcars, shipbuilding, pressure vessels, and general fabrication.**

Utilizing advanced manufacturing processes and specially formulated composite fillers, Coreweld metal-cored wires combine high deposition rates, high deposition efficiencies, high travel speeds, excellent penetration, and ease of use.



These qualities make Coreweld the brand of choice for operators who want to see production levels increase, costs decrease, and profits rise.

**In today's highly competitive market, companies are constantly searching for ways to reduce cost and increase productivity. Metal-cored wires may be the solution.**

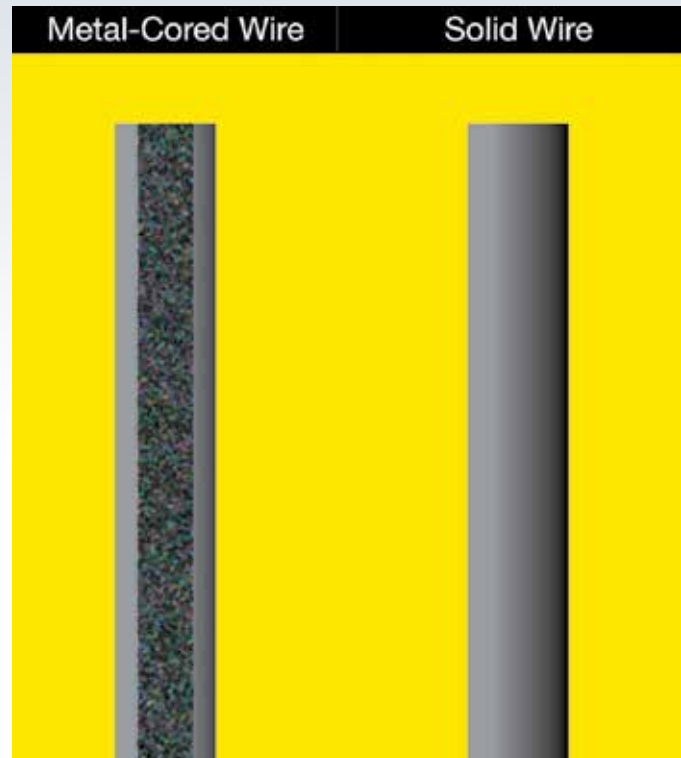
## **FASTER, CLEANER, MORE EFFICIENT WELDING.**

Metal-cored wires offer several advantages over their solid wire counterparts. Since metal-cored wires carry the current on the outer sheath, current densities are considerably higher than those found in solid wires where the load is carried across the entire cross-sectional area. As a result, the metal-cored arc tends to be softer and can bridge gaps easier with reduced tendency for burn through.

Metal-cored wires provide excellent arc stability and outstanding penetration and wetting, with excellent fusion at the root joint and sidewall. The result is a high quality weld with minimal slag and spatter, and fewer residual silica islands.

The higher current density can produce higher deposition rates and can also yield higher travel speeds than solid wires. In addition, the lower clean up requirement and reduced need for post-weld operations can save significantly on labor costs and improve overall productivity. Although metal-cored wires cost more than solid wires, increases in efficiency and productivity, coupled with the reduction of labor costs for repairs and clean up, typically lead to lower total costs.

Metal-cored wires can be used with equal success in both hand-held and automated welding applications, as well as in pulse welding. They also yield exceptional welds with high deposition rates and higher feed speeds than their solid wire counterparts.



- **High deposition rates and travel speeds**
- **No slag and almost no spatter**
- **Little to no post-weld clean up or cleaning between passes**
- **Excellent side-wall fusion and root penetration**
- **Ability to bridge part gaps without burnthrough**
- **Ability to weld thin materials at high amperages without burnthrough**
- **Ability to use next larger electrode diameter**
- **Capability to weld out-of-position with pulsed spray or short circuit transfer**



# COREWELD 77-HS

## Metal-Cored Wires

Coreweld 77-HS is a metal-cored wire designed to run at faster travel speeds, higher deposition rates and leave very few silica islands. This metal cored wire is ideal for robotic applications. Optimal performance is achieved with 90% Argon / 10% CO<sub>2</sub> shielding gas.

<b>Classifications:</b>	ASME SFA A5.18, ASME SFA A5.36, AWS A5.36: E70T15-M20A4-CS1-H4, AWS A5.36: E70T15-M21A4-CS1-H4, AWS A5.18: E70C-6M H4
<b>Approvals:</b>	CWB CSA W48 E491C-6M-H4, DNV-GL
<b>Industry:</b>	Mobile Equipment, Railcars, Industrial and General Fabrication, Automotive

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% CO<sub>2</sub></b>				
As Welded	420 MPa (61 ksi)	515 MPa (75 ksi)	60 %	32 %
<b>90% Ar - 10% CO<sub>2</sub></b>				
As Welded	425 MPa (62 ksi)	510 MPa (74 ksi)	58 %	33 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-29 °C (-20 °F)	52 J (38 ft-lb)
As Welded	-40 °C (-40 °F)	38 J (28 ft-lb)
<b>90% Ar - 10% CO<sub>2</sub></b>		
As Welded	-29 °C (-20 °F)	85 J (63 ft-lb)
As Welded	-40 °C (-40 °F)	54 J (40 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
<b>75% Ar - 25% CO<sub>2</sub></b>					
0.04	0.90	0.70	0.015	0.01	0.40
<b>90% Ar - 10% CO<sub>2</sub></b>					
0.04	1.00	0.70	0.015	0.01	0.40

### Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
<b>90% Ar - 10% 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.)	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.)	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.)	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.)	360 A	33 V	1400 cm/min (550 in./min)	13.9 kg/h (6.3 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 %



# COREWELD 77-HS

## Metal-Cored Wires

Deposition Data						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
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.)	460 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 %

Recommended Welding Parameters				
Diameter	Current	Voltage	Wire Feed Speed	TTW Dist.
<b>Full Range 75% Ar - 25% CO<sub>2</sub></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)	-
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>Full Range 90% Ar - 10% CO<sub>2</sub></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.)



# COREWELD C6

## Metal-Cored Wires

Coreweld C6 was developed and “fine-tuned” especially for hand-held, automatic and robotic welding in the automotive industry, as well as railcar 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% CO<sub>2</sub></b>				
As Welded	505 MPa (74 ksi)	595 MPa (86 ksi)	64 %	27 %
<b>90% Ar - 10% CO<sub>2</sub></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% CO<sub>2</sub></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% CO<sub>2</sub></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% CO<sub>2</sub></b>				
0.04	1.6	0.7	0.016	0.012
<b>90% Ar - 10% CO<sub>2</sub></b>				
0.04	1.6	0.8	0.017	0.015





# COREWELD C6

## Metal-Cored Wires

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	Wire Feed Speed	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 %



# COREWELD C6

## Metal-Cored Wires

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	Efficiency
<b>75% Ar - 25% CO<sub>2</sub></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% CO<sub>2</sub></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.)



# COREWELD C6 LF

## Metal-Cored Wires

Coreweld C6 LF is a low manganese emissions, high efficiency, metal-cored wire developed in response to new EPA\* regulations and guidelines from ACGIH (American Conference of Government Industrial Hygienists) for Manganese fume exposure limits. With all the same enhanced features of ESAB's standard Coreweld C6, Coreweld C6 LF has more than 50% lower manganese content and is designed to provide excellent operating qualities while significantly reducing the manganese levels in the welding fumes when compared to standard metal-cored electrodes of the same classification.

ESAB's optimized formulation aids users in their efforts to reduce exposure to manganese in the welding environment while providing good mechanical properties and low weld metal diffusible hydrogen levels. Coreweld C6 LF offers the same enhanced features of ESAB's standard Coreweld C6 with welder-friendly operating characteristics, including consistent arc stability, very low spatter, good bead shape and minimal clean-up in an easy-to-use wire. Its low diffusible hydrogen level helps avoid hydrogen-induced cold cracking in the welding of high strength steel.

Combining the Coreweld C6 LF low manganese formula with argon-based shielding gases and GMAW power supplies allows users to aggressively reduce the manganese concentration in welding fume while achieving the proven performance expected from ESAB. Coreweld C6 LF is well suited for both hand held and robotic or automated applications in the automotive industry, as well as for civil construction, mobile and heavy equipment, shipbuilding, railcar manufacturing, and general fabrication.

Typical Diffusible Hydrogen: 4 ml/100g of deposited weld metal (with 75% Ar/25% CO<sub>2</sub>) \*EPA 40CFR Part 63 Subpart XXXXXX; 1.0% Mn, 0.1% Ni, 0.1% Cr, 0.1% Cd and 0.1% Pb, by total weight of the electrode.

<b>Classifications:</b>	AWS A5.18:E70C-6M H4, AWS A5.36:E70T15-M20A4-CS1, AWS A5.36:E70T15-M21A4-CS1-H4, ASME SFA 5.18, ASME SFA 5.36
<b>Approvals:</b>	CWB CSA W48 E492C-6M-H4
<b>Industry or Segmentation:</b>	Automotive, Civil Construction, Ship/Barge Building, Railcars, General Cast Iron Repair and Fabrication

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

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	490 MPa (71 ksi)	579 MPa (84 ksi)	30 %
As Welded	462 MPa (67 ksi)	538 MPa (78 ksi)	30 %

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-29 °C (-20 °F)	76 J (56 ft-lb)
As Welded	-40 °C (-40 °F)	52 J (38 ft-lb)
<b>90% Ar - 10% CO<sub>2</sub></b>		
As Welded	-20 °C (-29 °F)	73 J (54 ft-lb)
As Welded	-40 °C (-40 °F)	57 J (42 ft-lb)



# COREWELD C6 LF

## Metal-Cored Wires

Typical Weld Metal Analysis %									
C	Mn	Si	S	P	Ni	Cr	Mo	V	Cu
<b>75% Ar - 25% CO<sub>2</sub></b>									
0.06	0.67	0.70	0.010	0.010	0.03	0.06	0.01	0.001	0.10
<b>90% Ar - 10% CO<sub>2</sub></b>									
0.07	0.74	0.81	0.010	0.010	0.03	0.06	0.01	0.001	0.10

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Wire Feed Speed	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 mm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19 mm (3/4 in.)	91 %
1.6 mm (1/16 in.)	290 A	26 V	510 mm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	19 mm (3/4 in.)	95 %
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.)	370 A	28 V	700 mm/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 %
<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.)	200 A	27 V	640 mm/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 mm/min (350 in./min)	4.1 kg/h (9.1 lb/h)	16 mm (5/8 in.)	97 %
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.)	290 A	29 V	1020 mm/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 %
1.2 mm (.045 in.)	360 A	33 V	1400 mm/min (550 in./min)	6.3 kg/h (13.9 lb/h)	16 mm (5/8 in.)	99 %



# COREWELD C6 LF

## Metal-Cored Wires

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Wire Feed Speed	TTW Dist.	Efficiency
1.4 mm (.052 in.)	190 A	26 V	440 mm/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 mm/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 mm/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 mm/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	34 V	1330 mm/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 mm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19 mm (3/4 in.)	91 %
1.6 mm (1/16 in.)	290 A	27 V	510 mm/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 mm/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 mm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	19 mm (3/4 in.)	99 %

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	Efficiency
<b>75% Ar - 25% CO<sub>2</sub></b>				
1.2 mm (.045 in.)	170-390 A	24-32 V	640-1400 cm/min (250-550 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	190-420 A	24-32 V	440-1346 cm/min (180-530 in./min)	16 mm (5/8 in.)
1.6 mm (1/16 in.)	230-430 A	24-29 V	380-1219 cm/min (150-480 in./min)	19 mm (3/4 in.)



# COREWELD 70

## Metal-Cored Wires

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.

<b>Classifications:</b>	ASME SFA 5.36, ASME SFA 5.18, AWS A5.36: E70T15-M20A2-CS1-H4, AWS A5.36: E70T15-M21A2-CS1-H4, AWS A5.18: E70C-6M-H4
<b>Approvals:</b>	CWB CSA W48 E491C-6M-H4, DB
<b>Industry:</b>	Automotive, Mobile Equipment, Industrial and General Fabrication, Power Generation, Bridge Construction, Civil Construction, Pipeline, Ship/Barge Building, Railcars

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% CO<sub>2</sub></b>				
As Welded	460 MPa (68 ksi)	550 MPa (80 ksi)	67 %	28 %
<b>92% Ar - 8% CO<sub>2</sub></b>				
As Welded	545 MPa (79 ksi)	585 MPa (85 ksi)	65 %	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-18 °C (0 °F)	68 J (50 ft-lb)
As Welded	-29 °C (-20 °F)	54 J (40 ft-lb)
<b>92% Ar - 8% CO<sub>2</sub></b>		
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
<b>75% Ar - 25% CO<sub>2</sub></b>				
0.06	1.4	0.6	0.019	0.010
<b>92% Ar - 8% CO<sub>2</sub></b>				
0.06	1.5	0.6	0.019	0.009

### Deposition Data

Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Efficiency (%)
0.9 mm (.035 in.)	150 A	25 V	813 cm/min (320 in./min)	1.2 kg/h (4.4 lb/h)	92 %
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 %



# COREWELD 70

## Metal-Cored Wires

Deposition Data					
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	Efficiency (%)
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 %
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 %
2.0 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 %
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 %
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 %

Recommended Welding Parameters				
Diameter	Current	Voltage	Wire Feed Speed	TTW Dist.
<b>Full Range 75% Ar - 25% CO<sub>2</sub></b>				
0.9 mm (.035 in.)	130-260 A	23-29 V	813-1727 cm/min (320-680 in./min)	9.5-19 mm (3/8-3/4 in.)
1.2 mm (.045 in.)	150-350 A	24-32 V	838-1453 cm/min (330-572 in./min)	9.5-19 mm (3/8-3/4 in.)
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm/min (262-328 in./min)	9.5-19 mm (3/8-3/4 in.)
1.6 mm (1/16 in.)	300-500 A	26-34 V	460-846 cm/min (181-333 in./min)	9.5-19 mm (3/8-3/4 in.)
2.0 mm (5/64 in.)	400-580 A	28-34 V	292-500 cm/min (115-197 in./min)	19-31.75 mm (3/4-1.25 in.)
2.4 mm (3/32 in.)	350-550 A	27-33 V	406-711 cm/min (160-280 in./min)	19-31.75 mm (3/4-1.25 in.)



# COREWELD 88HS-Ni1

## Metal-Cored Wires

Coreweld 88HS-Ni1 is recommended primarily for robotic or mechanized high speed welding of sheet steel. Welding speeds up to 90 ipm are possible when welding vertical down. The low slag level of Coreweld 88HS-Ni1 minimizes post-weld clean up. For this reason, Coreweld 88HS-Ni1 gives special advantage in applications where post-weld coating or painting is specified. Coreweld 88HS-Ni1 is a 1% nickel low alloy metal cored wire designed specifically for high speed welding where a clean weld surface is required. Coreweld 88HS-Ni1 deposits have very few silica islands and almost no slag at the weld toes.

<b>Classifications:</b>	AWS A5.28:E80C Ni1M H4, AWS A5.36:E80T15-M20A5-Mi1-H4, AWS A5.36:E80T15-M21A5-Ni1 H4, ASME SFA 5.28, ASME SFA 5.36
<b>Approvals:</b>	CWB CSA W48 E551C-Ni1-H4
<b>Industry or Segmentation:</b>	Industrial and General Fabrication, Railcars, Power Poles

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% CO<sub>2</sub></b>				
As Welded	480 MPa (69.6 ksi)	576 MPa (83.6 ksi)	60 %	27 %
<b>90% Ar - 10% CO<sub>2</sub></b>				
As Welded	512 MPa (74.3 ksi)	598 MPa (86.7 ksi)	58 %	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-46 °C (-50 °F)	37 J (28 ft-lb)
<b>90% Ar - 10% CO<sub>2</sub></b>		
As Welded	-46 °C (-50 °F)	39 J (29 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni
<b>75% Ar - 25% CO<sub>2</sub></b>					
0.053	1.23	0.55	0.016	0.010	0.96
<b>90% Ar - 25% CO<sub>2</sub></b>					
0.051	1.31	0.61	0.017	0.011	0.96

### Deposition Data

Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
<b>90% Ar - 10% 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)	94 %
1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	3.0 kg/h (6.5 lb/h)	96 %
1.2 mm (.045 in.)	230 A	25 V	760 cm/min (300 in./min)	3.5 kg/h (7.7 lb/h)	98 %
1.2 mm (.045 in.)	260 A	28 V	890 cm/min (350 in./min)	4.1 kg/h (9.1 lb/h)	97 %





# COREWELD 88HS-Ni1

## Metal-Cored Wires

Deposition Data					
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	Efficiency
1.2 mm (.045 in.)	290 A	29 V	1020 cm/min (400 in./min)	4.6 kg/h (10.2 lb/h)	98 %
1.2 mm (.045 in.)	330 A	32 V	1270 cm/min (500 in./min)	5.8 kg/h (12.7 lb/h)	99 %
1.2 mm (.045 in.)	360 A	33 V	1400 cm/min (550 in./min)	13.9 kg/h (6.3 lb/h)	99 %
1.4 mm (.052 in.)	190 A	26 V	440 cm/min (180 in./min)	2.5 kg/h (5.5 lb/h)	94 %
1.4 mm (.052 in.)	240 A	27 V	640 cm/min (250 in./min)	3.5 kg/h (7.7 lb/h)	95 %
1.4 mm (.052 in.)	280 A	28 V	760 cm/min (300 in./min)	4.2 kg/h (9.2 lb/h)	97 %
1.4 mm (.052 in.)	340 A	31 V	1020 cm/min (400 in./min)	5.1 kg/h (11.2 lb/h)	99 %
1.4 mm (.052 in.)	410 A	36 V	1330 cm/min (530 in./min)	7.1 kg/h (15.7 lb/h)	99 %
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	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)	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)	98 %
1.6 mm (1/16 in.)	460 A	32 V	890 cm/min (350 in./min)	7.2 kg/h (15.9 lb/h)	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)	99 %

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
<b>75% Ar - 25% CO<sub>2</sub></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% CO<sub>2</sub></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.)



# COREWELD W

## Metal-Cored Wires

Coreweld W is a metal-cored wire designed for single or multipass welding on weathering grade steels. Coreweld W was designed specifically to meet the demand for weld deposits that color match the low alloy, high strength weathering grade steels, such as A588 and A242.

<b>Classifications:</b>	AWS A5.28:E80C-W4 H4, ASME SFA 5.28, AWS A5.36:E90T15-M21A2-W2, ASME SFA 5.28, ASME SFA 5.36
<b>Approvals:</b>	DB
<b>Industry or Segmentation:</b>	Ship/Barge Building, Industrial and General Fabrication, Mobile Equipment, Railcars, Civil Construction, Bridge Construction

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

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
<b>75% Ar - 25% CO<sub>2</sub></b>			
As Welded	642 MPa (93 ksi)	718 MPa (104 ksi)	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-29 °C (-20 °F)	31 J (23 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Cr	Cu
<b>75% Ar - 25% CO<sub>2</sub></b>							
0.06	1.2	0.7	0.019	0.01	0.7	0.6	0.6

### 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 mm (5/8 in.)	99 %
1.6 mm (1/16 in.)	230 A	24 V	380 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19.1 mm (3/4 in.)	91 %



# COREWELD W

## Metal-Cored Wires

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
1.6 mm (1/16 in.)	290 A	26 V	510 cm/min (200 in./min)	4.0 kg/h (8.8 lb/h)	19.1 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)	19.1 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)	19.1 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)	19.1 mm (3/4 in.)	99 %
90% Ar - 10% CO <sub>2</sub>						
1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	3.0 kg/h (6.5 lb/h)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 mm (5/8 in.)	99 %
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19.1 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)	19.1 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)	19.1 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)	19.1 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)	19.1 mm (3/4 in.)	99 %

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
75% Ar - 25% CO <sub>2</sub>				
1.2 mm (.045 in.)	150-350 A	24-32 V	838-1453 cm/min (330-572 in./min)	9.5-19.1 mm (3/8-3/4 in.)
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm/min (262-328 in./min)	9.5-19.1 mm (3/8-3/4 in.)



# COREWELD 80-D2

## Metal-Cored Wires

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.

<b>Classifications:</b>	AWS A5.28:E80C-G H4, AWS A5.36:E80T15_M21A2-G3, ASME SFA 5.28, ASME SFA 5.36
<b>Industry or Segmentation:</b>	Process, Mobile Equipment, Industrial and General Fabrication, Automotive

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Reduction in Area	Elongation
<b>75% Ar - 25% CO<sub>2</sub></b>				
As Welded	530 MPa (77 ksi)	620 MPa (90 ksi)	62 %	26 %
Stress Relieved 8 hr 635 °C (1175 °F)	530 MPa (77 ksi)	620 MPa (90 ksi)	68 %	26 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-29 °C (-20 °F)	46 J (34 ft-lb)
As Welded	-40 °C (-40 °F)	31 J (23 ft-lb)
Stress Relieved 8 hr 635 °C (1175 °F)	-29 °C (-20 °F)	34 J (25 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Mo
<b>75% Ar - 25% CO<sub>2</sub></b>					
0.09	1.6	0.5	0.01	0.01	0.5

### 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 mm (5/8 in.)	99 %



# COREWELD 80-D2

## Metal-Cored Wires

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency
1.6 mm (1/16 in.)	230 A	24 V	380 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19.1 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)	19.1 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)	19.1 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)	19.1 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)	19.1 mm (3/4 in.)	99 %
90% Ar - 10% CO <sub>2</sub>						
1.2 mm (.045 in.)	200 A	27 V	640 cm/min (250 in./min)	3.0 kg/h (6.5 lb/h)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 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)	15.8 mm (5/8 in.)	99 %
1.6 mm (1/16 in.)	230 A	26 V	380 cm/min (150 in./min)	2.8 kg/h (6.2 lb/h)	19.1 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)	19.1 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)	19.1 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)	19.1 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)	19.1 mm (3/4 in.)	99 %

Recommended Welding Parameters				
Diameter	Amps	Volts	Wire Feed Speed	TTW Dist.
75% Ar - 25% CO <sub>2</sub>				
0.9 mm (.035 in.)	130-260 A	23-29 V	813-1727 cm/min (320-680 in./min)	9.5-19.1 mm (3/8-3/4 in.)
1.2 mm (.045 in.)	150-350 A	24-32 V	838-1453 cm/min (330-572 in./min)	9.5-19.1 mm (3/8-3/4 in.)
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm/min (262-328 in./min)	9.5-19.1 mm (3/8-3/4 in.)
1.6 mm (1/16 in.)	300-500 A	26-34 V	460-846 cm/min (181-333 in./min)	9.5-19.1 mm (3/8-3/4 in.)



# COREWELD 110

## Metal-Cored Wires

Coreweld 110 is a metal cored electrode designed for single and multipass welding of high strength low alloy steels, such as T-1, HY-80, and HY-100. The arc is smooth with virtually no spatter. Coreweld 110 is recommended for welding quenched and tempered high strength steels. Because of the metallic core, the wire offers both the high deposition rates of a flux cored electrode and the high efficiencies of a solid wire.

<b>Classifications:</b>	ASME SFA 5.36, ASME SFA 5.28, AWS A5.36: E110T15-M21A6-K3-H4, AWS A5.28: E110C-K3
<b>Industry:</b>	Bridge Construction, Ship/Barge Building

### Typical Tensile Properties

Condition	Yield Strength	Tensile Strength	Elongation
<b>75% Ar - 25% CO<sub>2</sub></b>			
As Welded	662 MPa (96 ksi)	773 MPa (112 ksi)	18 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
<b>75% Ar - 25% CO<sub>2</sub></b>		
As Welded	-18 °C (0 °F)	47 J (35 ft-lb)
As Welded	-51 °C (-60 °F)	41 J (30 ft-lb)

### Typical Weld Metal Analysis %

C	Mn	Si	S	P	Ni	Mo
<b>75% Ar - 25% CO<sub>2</sub></b>						
0.07	1.6	0.35	0.02	0.01	2.3	0.5

### Deposition Data

Diameter	Current	Voltage	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 %
<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 %



# COREWELD 110

## Metal-Cored Wires

Deposition Data						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
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.)	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 %

Recommended Welding Parameters				
Diameter	Current	Voltage	Wire Feed Speed	TTW Dist.
<b>Full Range 75% Ar - 25% CO<sub>2</sub></b>				
1.2 mm (.045 in.)	150-350 A	24-32 V	838-1453 cm/min (330-572 in./min)	9.5-19 mm (3/8-3/4 in.)
1.4 mm (.052 in.)	200-400 A	26-32 V	665.5-833 cm/min (262-328 in./min)	9.5-19 mm (3/8-3/4 in.)
1.6 mm (1/16 in.)	300-500 A	26-34 V	460-846 cm/min (181-333 in./min)	9.5-19 mm (3/8-3/4 in.)



# WELDING FILLER METAL DATABOOK



20

K T - X M J H Z

- Optional Hydrogen Designation
- Impacts (20 ft-lb @ -400C)
- M = Ar/CO2 (if present)
- Usability, Performance, Impacts

Polarity	Charpy V-Notch impact
DCEP	20 ft-lb @0°F
DCEP	20 ft-lb @0°F
DCEP	None
DCEP	None
DCEP	None
DCEP	None
DCEP	20 ft-lb @-20°F
DCEP/DCEN(b)	20 ft-lb @-20°F
DCEP/DCEN(b)	20 ft-lb @-20°F
DCEP	None
DCEN	20 ft-lb @-20°F
DCEN	20 ft-lb @-20°F
DCEP	20 ft-lb @-20°F
DCEP	None
DCEN	None
DCEN	20 ft-lb @-20°F
DCEP	20 ft-lb @-20°F
DCEP	None
DCEN	None
DCEN	None
(c)	None
(c)	None

EN (Electrode Negative) for improved out-of-position welding

**Operation of Dual Shield Electrode**  
A constant voltage power source operated on DCEP (Electrode Positive) is needed for proper operation. Best results are obtained by using suggested settings and adjusting travel speed to obtain desired bead size.

**Shielding gas with a low dew point (below -40°F)** at a flow rate of 30-40 CFH is recommended. When using 75% Ar/25% CO2 shielding gas, voltages may be reduced by approximately 11/2 volts. For fully automatic operations, amperages can be increased by approximately 25%.





FLUX-CORED WIRE (FOM)

# Shield 700X

Shield 700X is a high deposition, deep penetration wire for joining of heavy structural steel components. Designed for horizontal position welding using CO<sub>2</sub> shielding gas, this X Series wire provides high deposition rates, high and excellent performance. The bead contour, smooth ripple and slag chemistry allow easy slag removal even in vertical positions.

Standards:	AWS A5.20:E70T-1C1-B/E70T-9C1-B, AWS A5.38:E70T1-C1A2-CS1-HB ASME SFA 5.20, ASME SFA 5.38
Applications:	ABS, LR, CWB CSA W48 E492T-1, DNV-GL
Typical Segmentation:	Heavy Equipment, Large Components, Mobile Equipment, Agricultural Equipment

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

Typical Tensile Properties			
Condition	Yield Strength	Tensile Strength	Elongation
As Welded	545 MPa (79 ksi)	600 MPa (87 ksi)	29%

Typical Charpy V-Notch Properties		
Condition	Testing Temperature	Impact Value
As Welded	-18 °C (0 °F)	66 J (49 ft-lb)
As Welded	-29 °C (-20 °F)	45 J (33 ft-lb)

Typical Weld Metal Analysis %					
	C	Mn	Si	S	P
100% CO <sub>2</sub>	0.035	1.50	0.55	0.015	0.011

Deposition Data						
Diameter	Amps	Volts	Wire Feed Speed	Deposition Rate	T/W Dist.	Efficiency
1.6 mm (1/16 in.)	149 A	23 V	254 cm/min (100 in./min)	1.3 kg/h (2.8 lb/h)	19 mm (3/4 in.)	80%
1.6 mm (1/16 in.)	168 A	24 V	305 cm/min (120 in./min)	1.6 kg/h (3.5 lb/h)	19 mm (3/4 in.)	80%
1.6 mm (1/16 in.)	187 A	24 V	356 cm/min (140 in./min)	1.9 kg/h (4.2 lb/h)	19 mm (3/4 in.)	80%
1.6 mm (1/16 in.)	205 A	25 V	406 cm/min (160 in./min)	2.2 kg/h (4.9 lb/h)	19 mm (3/4 in.)	80%
1.6 mm (1/16 in.)	223 A	25 V	457 cm/min (180 in./min)	2.5 kg/h (5.6 lb/h)	19 mm (3/4 in.)	80%
1.6 mm (1/16 in.)	240 A	25 V	508 cm/min (200 in./min)	2.9 kg/h (6.3 lb/h)	19 mm (3/4 in.)	81%
1.6 mm (1/16 in.)	257 A	26 V	559 cm/min (220 in./min)	3.2 kg/h (7.0 lb/h)	19 mm (3/4 in.)	81%
1.6 mm (1/16 in.)	273 A	26 V	610 cm/min (240 in./min)	3.5 kg/h (7.7 lb/h)	19 mm (3/4 in.)	81%
1.6 mm (1/16 in.)	289 A	26 V	661 cm/min (260 in./min)	3.8 kg/h (8.4 lb/h)	19 mm (3/4 in.)	81%

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