# Coreweld C6 ECO

Coreweld C6 ECO 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 ECO has more than 50 percent 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 ECO offers the same enhanced features of ESAB's standard Coreweld C6 ECO 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 ECO 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 ECO 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, rail car manufacturing, and general fabrication.Typical Diffusible Hydrogen: 4 ml/100g of deposited weld metal (with 75% Ar/25% CO2) *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.

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|---|---|
| **Approvals** | AWS A5.36 E70T15-M20A4-CS1/E70T15-M21A4-CS1-H4<br>AWS A5.18 E70C-6M H4<br>CWB CSA W48 E492C-6M-H4 |
| **Industry** | Automotive<br>Civil Construction<br>General Cast Iron Repair and Fabrication<br>Railcars<br>Ship/Barge Building |

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

**Typical Charpy V-Notch Properties**

| Condition | Testing Temperature | Impact Value |
|---|---|---|
| **90% Ar - 10% CO2** | | |
| As Welded | -40 °C (-40 °F) | 57 J (42 ft-lb) |
| As Welded | -20 °C (-29 °F) | 73 J (54 ft-lb) |
| **75% Ar - 25% CO2** | | |
| As Welded | -40 °C (-40 °F) | 52 J (38 ft-lb) |
| As Welded | -29 °C (-20 °F) | 79 J (58 ft-lb) |

**Deposition Data**

| Diameter | Current | Voltage | Wire Feed Speed | Deposition Rate | TTW Dist. | Deposition Efficiency % |
|---|---|---|---|---|---|---|
| **75% Ar - 25% CO2** | | | | | | |
| 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.) | 370 A | 28 V | 700 mm/min (280 in./min) | 5.7 kg/h (12.5 lb/h) | 19 mm (3/4 in.) | 96 % |

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## Deposition Data

| Diameter | Current | Voltage | Wire Feed Speed | Deposition Rate | TTW Dist. | Deposition Efficiency % |
|---|---|---|---|---|---|---|
| 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 % |
| **90% Ar - 10% CO2** | | | | | | |
| 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.) | 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 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 mm/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 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

| Wire Diameter | Current | Voltage | TTW Dist. | Wire Feed Speed |
|---|---|---|---|---|
| **75% Ar - 25% CO2** | | | | |
| 1.2 mm (.045 in.) | 170-390 A | 24-32 V | 16 mm (5/8 in.) | 640-1400 cm/min (250-550 in./min) |
| 1.4 mm (.052 in.) | 190-420 A | 24-32 V | 16 mm (5/8 in.) | 440-1346 cm/min (180-530 in./min) |
| 1.6 mm (1/16 in.) | 230-430 A | 24-29 V | 19 mm (3/4 in.) | 380-1219 cm/min (150-480 in./min) |



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