

# **TECHNICAL** **DATA SHEET**



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**ESAB C6M Metal-Cored Wires (MCAW)**  
**Mild Steel Wires**

Art. No. 984.2434112...

# TECHNICAL DATA SHEET

## ESAB C6M Mild Steel Welding Wire

Art. No. 984.2434112...

### PRODUCT DESCRIPTION

ESAB C6M is an all-purpose metal cored wire for hand-held, automatic and robotic welding in the automotive industry, as well as rail car manufacturing, structural welding and other similar applications.

Classifications	ASME SFA 5.36:, ASME SFA 5.18:, AWS A5.36:E70T15-M21A4-CS1-H4, AWS A5.36:E70T15-M20A2-CS1-H4, AWS A5.18:E70C-6MD H4
Approvals	CWB CSA W48 E491C-6M-H4
Industry or Segmentation	Mobile Equipment, Railcars, Industrial and General Fabrication, Bridge Construction, Civil Construction, 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
75% Ar - 25% CO2				
As Welded	470 MPa (68 ksi)	545 MPa (79 ksi)	60 %	26 %
90% Ar - 10% CO2				
As Welded	480 MPa (70 ksi)	550 MPa (80 ksi)	59 %	25 %

### Typical Charpy V-Notch Properties

Condition	Testing Temperature	Impact Value
75% Ar - 25% CO2		
As Welded	-29 °C (-20 °F)	64 J (47 ft-lb)
90% Ar - 10% CO2		
As Welded	-29 °C (-20 °F)	65 J (48 ft-lb)

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### Typical Weld Metal Analysis %

C	Mn	Si	S	P
75% Ar - 25% CO <sub>2</sub>				
0.05	1.4	0.7	0.015	0.013
90% Ar - 10% CO <sub>2</sub>				
0.05	1.4	0.7	0.015	0.013

### Deposition Data

75% Ar - 25% CO <sub>2</sub>						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
1.2 mm (.045 in.)	170 A	24 V	510 mm/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 mm/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 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	29 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.)	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)	2.8 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 %

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## ESAB C6M Mild Steel Welding Wire

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### Deposition Data

90% Ar - 25% CO <sub>2</sub>						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
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.)	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)	2.8 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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## ESAB C6M Mild Steel Welding Wire

Art. No. 984.2434112...

### Deposition Data

90% Ar - 25% CO <sub>2</sub>						
Diameter	Current	Voltage	Wire Feed Speed	Deposition Rate	TTW Dist.	Efficiency (%)
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.)	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)	2.8 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 %

### Full Range 75% Ar - 25% CO<sub>2</sub>

Diameter	Current	Voltage	Wire Feed Speed	TTW Dist.
1.2 mm (.045 in.)	170-390 A	24-32 V	640-1397 cm/min (250-550 in./min)	16 mm (5/8 in.)
1.4 mm (.052 in.)	190-420 A	24-32 V	457-1346 cm/min (180-530 in./min)	16 mm (5/8 in.)
1.6 mm (1/16 in.)	230-430 A	24-29 V	381-1219 cm/min (150-480 in./min)	19 mm (3/4 in.)

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Art. No. 984.2434112...

2021

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