Metalshield™ MC-706

Mild Steel Metal-Cored Wire (AWS E70C-6M H8)

When you're welding heavy-duty materials in demanding environments like structural steel, heavy equipment, agricultural, or automotive component manufacturing, you need a highly productive wire. Metalshield MC-706 is built for productivity throughout the welding process. MC-706 even welds well over mill scale to reduce prep time. A stiff sheath aids in improving the feedability of the wire, and few metal-cored products compare in terms of bead shape and appearance. Not only does MC-706 reduce the amount of silicate islands, it also moves the silicate islands away from the toes and into the center of the bead, making it easier to remove the silicon and minimize cleanup time.

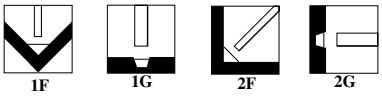
Advantage Lincoln

- Minimal silicate islands – reduces/eliminates cleaning.
- Silicate placement away from the toes of the weld – makes removal easier/makes it easier to visually inspect weld.
- Excellent wash-in and bead appearance – enhances weld bead appearance and improves overall weld quality.
- Stiffer sheath – excellent feedability.
- Excellent performance over mill scale – reduces joint preparation time.
- Minimal spatter when welding over mill scale – can reduce cleaning time.
- ISO14001 and 9001 certified – manufactured to standards for environmental and quality management systems.

Typical Applications

- High speed fillet welds on lap and T-joints.
- Robotic and hard automation.
- Weldments over mill scale where spatter must be minimized.
- Weldments that are coated after welding.
- Weldments where weld quality, weld productivity, and weld appearance are of utmost importance.
- Out-of-position welding can be done with a pulsed spray or short-arc welding procedure.

Welding Positions



Shielding Gas

75-92% Argon / Balance CO_2
Flow Rate: 40-60 CFH
Not recommended for use with 100% CO_2.

Conformance

AWS A5.18-01: E70C-6M H8
ASME SFA-5.18: E70C-6M
CWB/CSA: E492C-6M-H8

Diffusible Hydrogen - As required per AWS A5.18-01

(mL/100g weld deposit), 75% argon/25% CO_2 shielding gas

Requirements (AWS E70C-6M H8):	<8
Test Results:	3-5

DIAMETERS/PACKAGING

Diameter in. (mm)	33 Lb. (15 kg) Steel Spool	50 Lb. (23 kg) Fiber Spool	50 Lb. (23 kg) Coil	500 Lb. (227 kg) Accu-Trak™ Drum (20 in.)
.045 (1.2)	ED031583	ED031586	ED031589	ED031592
.052 (1.3)	ED031584	ED031587	ED031590	ED031593
1/16 (1.6)	ED031585	ED031588	ED031591	ED031594

MECHANICAL PROPERTIES – As Required per AWS A5.18-01

	Yield Strength psi (MPa)	Tensile Strength psi (MPa)	Elongation (%)	Charpy V-Notch ft•lbf (Joules) @ -20ºF (-29ºC)
Requirements AWS E70C-6M H8 As Welded	58,000 (400) min.	70,000 (483) min.	22 min.	20 (27) min.
Test Results 75% Ar/25% CO_2	59,000–62,800 (407–433)	72,500–77,400 (500–534)	25–29	27–48 (37–65)

DEPOSIT COMPOSITION - As Welded per AWS A5.18-01

	%C	%Mn	%Si	%S	%P	%Ni
Requirements AWS E70C-6M H8	0.12 max.	1.75 max.	0.90 max.	0.03 max.	0.03 max.	0.50 max.
Test Results 75% Ar/25% CO_2	0.03–0.04	1.28–1.49	0.63–0.76	0.029 max.	0.01 max.	0.33–0.45

TYPICAL OPERATING PROCEDURES

Diameter Polarity CTWD[1] Wire Weight Shielding Gas	Wire Feed Speed in/min (m/min)	Voltage (volts) [2]	Approx. Current (amps)	Melt-Off Rate lbs/hr (kg/hr)	Deposition Rate lbs/hr (kg/hr)	Efficiency (%)
.045" (1.2 mm) DC+ 3/4-1" (19-25 mm) 0.42 lbs./1000 (7.4 g/m) 90% Ar/10% CO_2	200 (5.1)	21-23	155	5.0 (2.3)	4.6 (2.1)	92
	250 (6.4)	22-24	185	6.2 (2.8)	5.8 (2.6)	94
	300 (7.6)	22-26	220	7.7 (3.5)	7.0 (3.2)	91
	350 (8.9)	22-27	245	8.9 (4.0)	8.2 (3.7)	93
	400 (10.2)	23-27	260	10.1 (4.6)	9.4 (4.3)	93
	450 (11.4)	23-28	280	11.4 (5.2)	10.7 (4.9)	94
	500 (12.7)	23-29	305	12.6 (5.7)	12.2 (5.5)	97
	550 (14.0)	24-29	315	13.9 (6.3)	13.6 (6.2)	98
	600 (15.2)	25-30	325	15.1 (6.8)	14.8 (6.7)	98
	650 (16.5)	26-30	355	16.5 (7.5)	16.3 (7.4)	98
	700 (17.8)	26-30	360	17.7 (8.0)	17.5 (7.9)	99
.052" (1.3 mm) DC+ 3/4-1" (19-25 mm) 0.56 lbs./1000 (9.9 g/m) 90% Ar/10% CO_2	200 (5.1)	22-24	210	6.7 (3.0)	6.3 (2.9)	94
	250 (6.4)	22-26	260	8.5 (3.9)	7.8 (3.5)	92
	300 (7.6)	22-27	290	10.2 (4.6)	9.5 (4.3)	94
	350 (8.9)	23-27	315	11.8 (5.4)	11.4 (5.2)	97
	400 (10.2)	24-28	350	13.8 (6.3)	13.4 (6.1)	97
	450 (11.4)	25-28	370	15.2 (6.9)	15.1 (6.8)	99
	500 (12.7)	27-29	390	16.9 (7.7)	16.8 (7.6)	99
	550 (14.0)	27-30	420	18.5 (8.4)	18.3 (8.3)	99
1/16" (1.6 mm) DC+ 3/4-1" (19-25 mm) 0.78 lbs./1000 (13.9 g/m) 90% Ar/10% CO_2	150 (3.8)	22-24	230	7.0 (3.2)	6.2 (2.8)	89
	200 (5.1)	22-25	280	9.4 (4.3)	8.7 (3.9)	93
	250 (6.4)	23-28	310	11.6 (5.3)	11.0 (5.0)	94
	300 (7.6)	24-29	370	13.9 (6.3)	13.8 (6.3)	99
	350 (8.9)	26-30	400	16.3 (7.4)	15.9 (7.2)	98
	400 (10.2)	26-31	450	18.4 (8.3)	18.4 (8.3)	100
	450 (11.4)	27-31	480	21.0 (9.5)	20.6 (9.3)	98

[1] To estimate ESO, subtract 3/16" (4.8mm) from CTWD.

[2] For greater percentage of CO_2 shielding gas, increase voltage by 1-2 volts.

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