



METAL-COR 6

GAS-SHIELDED METAL-CORED WIRE
AWS E70C-6M H4 **080305 - (replaces 071219)**

METAL-COR 6 is a metal cored wire with higher manganese and silicon levels, lower spatter, and higher strength than other wires. It has increased deoxidization levels to allow for more tolerance of mill scale, with fewer root pores. **METAL-COR 6** is recommended for single-pass and multi-pass welding in flat and horizontal positions with 75-95% Ar/CO₂. The wetting action is better than solid wire, minimizing cold lap on heavier sections of steel.

PRODUCT CHARACTERISTICS:

- Higher deoxidizer levels for improved performance on mill scale plate.
- Better wetting action than solid wire minimizes cold lap.
- Superb operator appeal.
- Good choice to use for short-circuit or pulse applications.

SPECIFICATIONS:

E70C-6M H4 per AWS A5.18, ASME SFA 5.18	DNV Grade III Y40MS
CWB E491C-6M-H4	Bureau Veritas S3YM
Lloyd's Register of Shipping Grade 3Y40S, H15	Germanischer Lloyd 3Y40H5S
ABS Grade 3SA, 3YSA	

SHIELDING GAS:

75-95% Ar/Bal CO₂, 35-50 cfh

WELDING POSITIONS:

Flat, horizontal, vertical down; all positions with pulse or short arc

STANDARD DIAMETERS:

.035", .045", .052", 1/16", 5/64", 3/32"

WELD TEST PARAMETERS:

METAL-COR 6 1/16" diameter electrode was welded using 75% Ar/25% CO₂ shielding gas with flow rate of 50 cfh, 350 amps (325 IPM), DCEP, and 30 volts, both with 3/4" electrical stick-out and 300°± 25°F inter-pass temperature. A total of six layers were welded, two passes each for Layers 1 through 6. The direction of travel was reversed for each layer.

TYPICAL UNDILUTED WELD METAL CHEMISTRY*:

	C	Mn	Si	P	S
75% Ar/25% CO ₂	0.08	1.57	0.69	0.015	0.014
90% Ar/10% CO ₂	0.05	1.69	0.78	0.012	0.013

TYPICAL DIFFUSIBLE HYDROGEN*: 2.10 ml/100 gr (75% Ar/25% CO₂)
2.15 ml/100 gr (90% Ar/10% CO₂)

TYPICAL MECHANICAL PROPERTIES**:	75% Ar/25% CO₂	90% Ar/10% CO₂
Tensile Strength	90,000 psi (622 MPa)	92,500 psi (638 MPa)
Yield Strength	79,000 psi (545 MPa)	82,600 psi (570 MPa)
Elongation	26%	26%
CVN @ 0°F (-18°C)	72 ft•lbs.(98 J)	68 ft•lbs.(92 J)
CVN @ -20°F (-29°C)	75 ft•lbs.(101 J)	46 ft•lbs.(62 J)

*The information contained or otherwise referenced herein is presented only as "typical" without guarantee or warranty, and Hobart Brothers Company expressly disclaims any liability incurred from any reliance thereon. Typically data is obtained when welded and tested in accordance with AWS A5.18 specification. Other tests and procedures may produce different results. No data is to be construed as a recommendation for any welding condition or technique not controlled by Hobart Brothers Company.

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AWS E70C-6M H4



RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 75% Ar/25% CO₂ shielding gas at a flow rate of 40 cfh.

Diameter Electrical Stickout (ES) Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)	
.035" 1/2 ± 1/8" Flat and Horizontal	26	200	550	8.47	
	28	250	760	11.97	
	30	260	791	12.54	
.045" 5/8" ± 1/8" Flat and Horizontal	27	200	273	6.11	
	29	250	395	9.42	
	31	300	520	13.0	
.052" 5/8" ± 1/8" Flat and Horizontal	34	350	645	16.51	
	28	250	265	7.95	
	30	300	355	11.64	
.052" 5/8" ± 1/8" Flat and Horizontal	32	350	450	15.11	
	34	400	640	16.51	
	1/16" 3/4" ± 1/4" Flat and Horizontal	30	275	185	7.66
30		300	220	9.66	
31		350	270	12.44	
32		400	330	15.75	
5/64" 1" ± 1/4" Flat and Horizontal	36	450	381	18.21	
	28	350	160	11.41	
	31	400	200	15.38	
5/64" 1" ± 1/4" Flat and Horizontal	34	475	250	19.50	
	3/32" 1" ± 1/4" Flat and Horizontal	31	400	132	10.8
		34	500	176	16.2
39		600	247	22.7	

Bold: Optimum parameters for welder appeal.

Notice:

Actual use of the product may produce varying results due to conditions and welding techniques over which Corex has no control, including, but not limited to, plate chemistry, weldment design, fabrication methods, electrode size, welding procedure, service requirements and environment. The purchaser is solely responsible for determining the suitability of Corex products for the purchaser's own use. Any prior representations shall not be binding. Corex disclaims any warranty of merchantability or fitness for any particular purpose with respect to its products.

Caution:

Consumers should be thoroughly familiar with the safety precautions shown on the Warning Label posted on each shipment in and in American National Standard Z49.1, "Safety in Welding and Cutting," published by the American Welding Society, 550 NW LeJeune Road, Miami, FL 33126, and OSHA Safety and Health Standards 29 CFR 1910, available from the U.S. Department of Labor, Washington, D.C. 20210.