



METAL-COR 6

GAS-SHIELDED METAL-CORED WIRE
AWS E70C-6M H4 **090330 - (replaces 080305)**

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 | |
| 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 | |
| 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 Le-Jeune 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.