# VERTI-COR I

**GAS-SHIELDED FLUX-CORED WIRE**
**AWS E71T-1C H8, E71T-1M H8**

**080716 (Replaces 070824)**

**VERTI-COR I** is a gas-shielded flux-cored wire for the semi-automatic welding of carbon steels. It can also be used for welding higher strength steels in applications where E71T-1 filler metal properties are deemed adequate. The wire is recommended for single-and multiple-pass welding in all positions. Its stiff arc action enhances deep penetration and arc control for out-of-position welding. Arc characteristics are superior with both 100% $CO_2$ and 75% Ar/25% $CO_2$ gas shielding. **VERTI-COR I** has a quick-freezing slag which facilitates welding, and the attainment of good bead contour, in the vertical up and overhead positions. Typical applications include shipbuilding and repair, and general structure and fabrication work.

## PRODUCT CHARACTERISTICS:

- Eliminates lack of fusion problems in all-position weldments.
- Higher deposition rates than GMAW wires in out-of-position welding.
- Stiff arc transfer for overhead welding.
- Can be used with straight $CO_2$ or 75% Ar/25% $CO_2$.

## SPECIFICATIONS:

E71T-1C H8, E71T-1M H8 per AWS A5.20, ASME SFA 5.20
ABS Grade 2SA, 2YSA

## SHIELDING GAS:

100% $CO_2$, 75% Ar/25% $CO_2$, 35-50 cfh

## WELDING POSITION:

All Positions

## STANDARD DIAMETERS:

.035", .045", .052", 1/16"

## WELD TEST PARAMETERS:

**VERTI-COR I** 1/16" diameter electrode was welded using 100% $CO_2$ shielding gas with flow rate of 40 cfh, 350 amps (330 IPM), DCEP, and 30 volts, and using 75% Ar/25% $CO_2$ shielding gas with flow rate of 50 cfh, 350 amps (330 IPM), DCEP, and 30 volts, both with 3/4" electrical stick-out and 300°± 25°F interpass 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 |
|---|---|---|---|---|---|
| **100% $CO_2$** | 0.07 | 1.33 | 0.54 | 0.020 | 0.017 |
| **75% Ar/25% $CO_2$** | 0.06 | 1.35 | 0.64 | 0.018 | 0.15 |

## TYPICAL MECHANICAL PROPERTIES*:

| | **100% $CO_2$** | **75% Ar/25% $CO_2$** |
|---|---|---|
| Tensile Strength | 95,000 psi (655 MPa) | 96,000 psi (664 MPa) |
| Yield Strength | 73,389 psi (506 MPa) | 85,000 psi (587 MPa) |
| Elongation | 28% | 24% |
| CVN @ 0°F (-18°C): | 54 ft•lbs (73 J) | 34 ft•lbs (46 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. Typical data are obtained when welded and tested in accordance with AWS A5.20 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.

www.hobartbrothers.com
400 Trade Square East
Troy, OH 45373
PH: 1-800-424-1543
FX: 1-800-541-6607

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**AWS E71T-1C H8, E71T-1M H8**

## RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 100% $CO_2$ shielding gas at a flow rate of 35 cfh. For Ar/$CO_2$ shielding gas, reduce voltage by approximately one (1) volt.

| Diameter<br>Electrical Stickout<br>(ES) Position | Arc<br>Voltage<br>(volts) | Current<br>DCEP (+)<br>(amps) | Approx.<br>Wire Feed Speed<br>(in/min) | Deposition<br>Rate<br>(lbs/hr) |
|---|---|---|---|---|
| .035”<br>1/2” to 3/4”<br>Flat and Horizontal | 22<br>**28**<br>29 | 100<br>**225**<br>250 | 195<br>610<br>720 | 2.4<br>to<br>8.4 |
| .035”<br>1/2” to 3/4”<br>Vertical and Overhead | 22<br>**25**<br>29 | 100<br>**200**<br>225 | 195<br>525<br>720 | 2.4<br>to<br>7.1 |
| .045”<br>1/2” to 3/4”<br>Flat and Horizontal | 24<br>**31**<br>36 | 150<br>**300**<br>350 | 190<br>**555**<br>705 | 3.6<br>10.6<br>14.4 |
| .045”<br>1/2” to 3/4”<br>Vertical and Overhead | 24<br>**26**<br>27 | 150<br>**225**<br>275 | 220<br>**345**<br>460 | 3.8<br>6.5<br>9.3 |
| .052”<br>1/2” to 3/4”<br>Flat and Horizontal | 23<br>**30**<br>31 | 150<br>**325**<br>350 | 145<br>**460**<br>474 | 3.6<br>9.5<br>12.2 |
| .052”<br>1/2” to 3/4”<br>Vertical and Overhead | 25<br>**26**<br>26 | 150<br>**225**<br>275 | 155<br>**260**<br>365 | 3.7<br>5.5<br>9.1 |
| 1/16”<br>1/2” to 1”<br>Flat and Horizontal | 23<br>**30**<br>37 | 150<br>**350**<br>400 | 100<br>**330**<br>395 | 3.2<br>8.0<br>13.5 |
| 1/16”<br>1/2” to 1”<br>Vertical and Overhead | 23<br>**25**<br>26 | 150<br>**225**<br>250 | 110<br>**175**<br>210 | 3.3<br>3.8<br>6.8 |

**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.