



METALLOY[®] 90

GAS-SHIELDED METAL-CORED WIRE
AWS E90C-K3

070814 (replaces 061023)

Metalloy 90 is a metal-cored wire designed for welding high-strength steels, particularly those requiring high toughness at sub-zero temperatures. Ideal for castings, pressure vessels and other applications associated with building ships and offshore platforms. Metalloy 90 can be used for both single- and multi-pass welding with either 98% Ar/2% O₂ or 75% Ar/25% CO₂ shielding gas.

PRODUCT CHARACTERISTICS:

- Suitable for welding high strength low alloy steels.
- Single or multi-pass welding.
- Higher deposition rates compared to solid wire.
- High CVN at sub-zero temperatures.

SPECIFICATIONS:

E90C-K3 per AWS A5.28

SHIELDING GAS:

98% Ar/2% O₂, 75% Ar/25% CO₂, 35-50 cfh

WELDING POSITIONS:

CV Spray - flat, horizontal, vertical down
Pulse and short arc - all positions

STANDARD DIAMETERS:

.045", 1/16"

TYPICAL UNDILUTED WELD METAL CHEMISTRY*:

	C	Mn	Si	Ni	Mo
98% Ar/2% O ₂	0.05	1.32	0.33	1.89	0.37
75% Ar/25% CO ₂	0.03	0.90	0.30	1.83	0.38

TYPICAL MECHANICAL PROPERTIES*:

	98% Ar/2% O ₂	75% Ar/25% CO ₂
Tensile Strength	100,800 psi (669 MPa)	97,000 psi (669 MPa)
Yield Strength	91,400 psi (631 MPa)	91,000 psi (628 MPa)
Elongation	25%	23%
CVN @ -60°F (-51°C)	25 ft•lbs (34J)	28 ft•lbs (38J)

*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 is obtained when welded and tested in accordance with AWS A5.28 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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RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 75% Ar/25% CO₂ shielding gas at a flow rate of 35 cfh.

Diameter	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)
.045"	27	200	245	5.9
	32	300	455	12.0
	35	350	580	15.2
1/16"	29	300	255	11.2
	32	400	390	17.6
	34	450	465	20.9

Bold: Optimum parameters for welder appeal.

Notice:

Actual use of the product may produce varying results due to conditions and welding techniques over which Tri-Mark 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 Tri-Mark products for the purchaser's own use. Any prior representations shall not be binding. Tri-Mark 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.