



TM-105D2

GAS-SHIELDED FLUX-CORED WIRE
AWS E100T5-D2C

100510 (replaces 061218)

TM-105D2 provides a combination of good low temperature impact toughness with minimum 100,000 psi tensile strength following stress relieving. The basic slag also minimizes any hydrogen-induced crack sensitivity. The molybdenum in the weld deposit helps prevent the deterioration of tensile strength during long term stress relieving. The chemical composition of this wire is well suited for the repair of manganese-moly castings. It can also be used to weld components which undergo post weld heat treatment and must maintain a tensile strength in the neighborhood of 100,000 psi. This wire is recommended for flat and horizontal positions, single-and multiple-pass welding, using 100% CO₂ shielding gas.

PRODUCT CHARACTERISTICS:

- Excellent low temperature toughness.
- Low weld metal hydrogen.
- Manganese-molybdenum weld metal well suited to repair castings of similar composition.
- After several hours of stress relieving, weld metal maintains tensile strength.

SPECIFICATIONS:

E1005-D2C, per AWS A5.29, ASME SFA 5.29

SHIELDING GAS:

100% CO₂

WELDING POSITIONS:

Flat and horizontal

STANDARD DIAMETERS:

1/16", 3/32"

WELD TEST PARAMETERS:

TM-105D2 3/32" diameter electrode was welded using 100% CO₂ shielding gas with flow rate of 40 cfh, 425 amps (201 ipm), DCEP, and 29 volts with 1" electrical stickout and 300°± 25°F interpass temperature. A total of seven layers were welded, with one pass for Layer 1 and two passes each for Layers 2 through 7. The direction of travel was reversed for each layer.

TYPICAL UNDILUTED WELD METAL CHEMISTRY*:

C	Mn	Si	P	S	Mo
0.11	2.00	0.55	0.009	0.010	0.44

TYPICAL MECHANICAL PROPERTIES*:

Tensile Strength 111,000 psi (766 MPa)
Yield Strength 97,000 psi (669 MPa)
Elongation 24%
CVN @ -40°F (-40°C) 49 ft•lbs (66 J)

Stress Relieved 1 hr. @ 1150°F

The above properties were determined with 100% CO₂ shielding gas.

*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 A5.29 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 100% CO₂ shielding gas at a flow rate of 35 cfh.

Diameter, Electrical Stickout (ES) Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)
1/16"	25	200	200	7.1
3/4" to 14"	28	350	360	to
Flat and Horizontal	34	425	485	18.0
3/32"	26	300	130	10.2
1" to 1/4"	31	450	215	to
Flat and Horizontal	35	600	340	27.4

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 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.