TM-55

GAS-SHIELDED FLUX-CORED WIRE
AWS E70T-5CJ H4, E70T-5MJ H4

070723 (replaces 061218)

TM-55 is made with a basic slag formulation and is intended for use where deposit quality and properties are of first concern. It is designed for the semi-automatic welding of carbon steels, and also for the welding of higher strength steels in applications where E70T-5 properties are deemed adequate. Weld metal hydrogen levels are very low. Deposits are much more crack-resistant than those made with acid slag E-70T-1 wires. TM-55 provides exceptionally high Charpy V-notch impact values at sub-zero temperatures. TM-55 is the recommended wire where weld soundness or toughness is paramount. It is recommended for single- and multiple-pass welding in the flat and horizontal positions using 100% CO_2 or Ar/CO_2 mixed gas shielding.

PRODUCT CHARACTERISTICS:

- Basic slag wires provide low crack sensitivity on certain problem steels.
- Excellent CVN impact properties at sub-zero temperatures.
- Low weld metal hydrogen levels.

SPECIFICATIONS:

E70T-5CJ H4, E70T-5MJ H4 per AWS A5.20, ASME SFA 5.20
ABS to AWS E70T-5C
CWB 100% CO_2 E492T-5CJ H4, 80% Ar/20% CO_2 E491T-5MJ H4
Military Spec. MIL-E-24403/1 Class MIL-70T-5C (CO_2 only)

SHIELDING GAS:

100% CO_2, 75-80% Ar/Bal CO_2, 35-50 cfh

WELDING POSITIONS:

Flat and horizontal

STANDARD DIAMETERS:

1/16", 3/32"

WELD TEST PARAMETERS:

TM-55 3/32" diameter electrode was welded using 100% CO_2 shielding gas with flow rate of 40 cfh, 425 amps (170 ipm), DCEP, and 29 volts with 1" electrical stickout and 300° ± 25°F interpass temperature. A total of five layers were welded with a full weave on Layer 1, two stringer passes on each of Layers 2 and 3, and two weave passes on each of Layers 4 and 5. The direction of travel was reversed for each layer.

TYPICAL UNDILUTED WELD METAL CHEMISTRY*:

	C	Mn	Si	P	S
100% CO_2	0.06	1.49	0.81	0.009	0.004
80% Ar/20% CO_2	0.08	1.61	0.84	0.007	0.009

TYPICAL MECHANICAL PROPERTIES*:

	100% CO_2	**80% Ar/20% CO_2**
Tensile Strength	85,000 psi (586 MPa)	95,000 psi (656 MPa)
Yield Strength	69,000 psi (479 MPa)	77,000 psi (529 MPa)
Elongation	26%	26%
CVN@-40°F (-40°C)	56 ft•lbs (76 J)	40 ft•lbs (55 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 is 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.

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RECOMMENDED OPERATING PARAMETERS:

The information below was determined by welding performed with 100% CO_2 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 ± 1/4" ES	**28**	**350**	**360**	to
Flat and Horizontal	34	425	485	18.0
3/32"	26	300	130	10.2
1" ± 1/4" ES	**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 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.