TM-711M

GAS-SHIELDED FLUX-CORED WIRE 070724 (replaces 060613)
AWS E71T-1C H8, E71T-1M H8

TM-711M is a gas shielded flux-cored wire for 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. TM-711M 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 structural 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 POSITIONS:

All positions

STANDARD DIAMETERS:

.035” .045”, .052”, 1/16”

WELD TEST PARAMETERS:

TM-711M 1/16” diameter electrode was welded using 100% CO_2 shielding gas with flow rateof 40 cfh, 270 amps (225 ipm), DCEP, and 27 volts, and using 75% Ar/25% CO_2 shielding gas with flow rate of 50 cfh, 265 amps (225 ipm), DCEP, and 26 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	0.05	1.08	0.43	0.007	0.013
75 Ar/25% CO_2	0.06	1.33	0.60	0.008	0.014

TYPICAL MECHANICAL PROPERTIES*:

	100% CO_2	**75% Ar/25% CO_2**
Tensile Strength	86, 000 psi (593 MPa)	92,000 psi (635 MPa)
Yield Strength	74,000 psi (514 MPa)	80,000 psi (554 MPa)
Elongation	26%	27%
CVN @ 0°F (-18°C)	35 ft•lbs (48 J)	25 ft•lbs (34 J)

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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. For Ar/CO_2 shielding gas, reduce voltage by approximately one (1) volt.

Diameter, Electrical Stickout (ES) Position	Arc Voltage (volts)	Current DCEP (+) (amps)	Approx. Wire Feed Speed (in/min)	Deposition Rate (lbs/hr)
.035"	25	175	545	6.3
1/2 to 3/4" ES	**26**	**200**	**645**	**7.6**
Flat and Horizontal	28	225	785	9.4
	23	125	330	3.8
	24	150	410	4.7
Vertical and Overhead	**25**	**175**	**545**	**6.3**
.045"	25	200	360	6.6
1/2" to 3/4" ES	**28**	**250**	**515**	**9.5**
Flat and Horizontal	32	320	784	15.4
	24	175	295	5.2
	25	**200**	**360**	**6.6**
Vertical and Overhead	26	225	435	8.1
.052"	27	275	375	9.3
1/2" to 3/4" ES	**29**	**300**	**430**	**11.0**
Flat and Horizontal	31	350	565	14.7
	24	200	245	6.2
	25	**225**	**285**	**6.9**
Vertical and Overhead	26	250	320	8.1
1/16"	28	300	275	8.5
1/2" to 3/4" ES	**29**	**350**	**340**	**11.6**
Flat and Horizontal	32	400	440	15.4
	24	200	160	4.9
	25	**225**	**185**	**5.7**
Vertical and Overhead	26	250	210	6.7

Bold: Optimum parameters for welder appeal.

Notice:
Actual use of the product may produce varying results due to conditions and welding techniques over which 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.