71T-1 Flux-Cored Carbon Steel Wire

SPECIFICATION/CLASSIFICATION: AWS A5.20 & ASME SFA-5.20 / E71T-1M & E71T-1C

Description/Application:

Weldcote Metals E71T-1, features lower spatter and fume emissions than conventional products in this class. This electrode is intended for single and multiple pass welding of carbon and certain low alloy steels in all positions, particularly in the overhead and vertical up positions. Weldcote Metals E71T-1 is used where a minimum tensile strength of 70,000 psi is required in the deposited weld metal. Weldcote Metals E71T-1 electrodes are classified with CO_2 shielding gas by this specification. However, gas mixtures of argon-CO_2 are also used to improve usability, especially for out of position applications. Decreasing amounts of CO_2 in the argon-CO_2 mixture will increase manganese and silicon in the deposit and may improve the impact properties. These electrodes are designed for single and multiple pass welding. The larger diameters (usually 5/64" (2.0 mm) and larger) are used for welding in the flat position and for horizontal fillets. The smaller diameters (usually 1/16" (1.6 mm) and smaller) are used for welding in all positions. E71T-1 is characterized by a spray transfer, low spatter loss, flat to slightly convex bead configuration, and a moderate volume of slag which completely covers the weld bead. E71T-1 electrodes have a rutile base slag.

Typical Filler Wire/Rod Chemistry in weight percent:

		C	Mn	Si	P	S	Cu	Ni	Cr	Mo	V
AWS [1]		*0.12*	*1.75*	*0.90*	*0.03*	*0.03*	*0.35*	*0.50*	*0.20*	*0.30*	*0.08*
Result	100%	0.066	1.15	0.66	0.015	0.012	0.15	0.01	0.02	< 0.001	<0.001
	75/25	0.037	1.30	0.76	0.011	0.009	0.02	0.02	0.03	0.02	0.02

AWS[1] Chemical Composition Requirements Range with single value maximum.

Typical Mechanical Properties of Weld Metal:

Shielding Gas	CO_2	75%Ar/25%CO_2	*AWS Requirements[2]*
Tensile Strength (psi)	84-87,000	89-93,000	*70-95,000 psi*
Yield Strength (psi)	75-77,000	81-83,000	*58,000 psi*
Elongation % in 2”	31.1 %	30.8 %	*22%*
Charpy V-notch ft. lbs.	79-81	64-65	*20*

AWS Requirements[2] single value minimum. Charpy V-notch ft. lbs for Impact Test done at the required 0°F

RECOMMENDED WELDING PARAMETERS:

FCAW Parameters (DC Reverse Polarity) Electrode Positive Optimum in **Bold**

Wire Diameter	Amps	Volts	75%Argon/25% CO_2	**Electrical Stickout**	Wire Feed (ipm)
035	125-**200**-250	23-**26**-28	35-40	3/8-3/4”	300-**640**-780
045	170-**250**-300	23-**27**-28	35-40	1/2-3/4”	265-**500**-600
052	165-**295**-350	24-**28**-30	38-50	3/4-1”	200-**380**-580
062	215-**340**-375	25-**29**-30	40-50	7/8-1”	165-**340**-440

Add 1-2 volts with 100% CO_2 gas

Typical Diffusible Hydrogen

AWS H8 Requirements (maximum) = 8.0 ml/100g Results = 100% CO_2 = 6.8 ml/100g, 75%Argon/25%CO_2

Other Test Data

AWS Requirements of D1.8/D1.8M:2009 = Conforms, Annex D after exposure for 3 days @ 80% humidity = Conforms
AWS Requirements A5.20: Radiographic Test = Conforms, Fillet Weld Test = Conforms
Bend Test @ face = No defects

842 Oak Grove Rd.
Kings Mountain, NC
28086
704-739-4115
Fax 704-739-6116

5994 Griggs Rd.
Houston, TX
77023

40 Messina Dr.
Braintree, MA
02184
781-849-1200
Fax 781-849-1270

258 S. Kitley Ave.
Indianapolis, IN
46219

1930 Carlos Ave.
Ontario, CA
91761
909-923-2167
Fax 909-923-7016

www.weldcotemetals.com