



**Certificate of Conformance  
to Requirements for Welding Electrode**

Product Type: **FabCO 712M**  
 Classification: **E71T-1MJ, E71T-9MJ, E71T-12MJ H4**  
 Specifications: **AWS A5.20/A5.20M; ASME SFA 5.20**  
 Diameter Tested: **.045"-.052"**  
 Date Tested: **9/22/2023**  
 Date Generated: **9/25/2023**

This is to certify that the product named above and supplied on the referenced order number is of the same classification, manufacturing process, and material requirements as the material which was used for the test that was concluded on the date shown, the results of which are shown below. All tests required by the specifications shown for classification were performed at that time and the material tested met all requirements. It was manufactured and supplied by the Quality System Program of Hobart Brothers, which meets the requirements of ISO 9001, ANSI/AWS A5.01, and other specification and Military requirements, as applicable. This document supplies actual test results of non-specific inspection in conformance with the requirements of EN 10204, type 2.2 certification.

**THE STEEL USED IN THIS LOT OF MATERIAL WAS MELTED AND MANUFACTURED IN THE U.S.A.**

**Test Settings**

Shielding Medium	Amps / Polarity	Volts	WFS in/min(m/min)	ESO in(mm)	Preheat F(C)	Interpass F(C)	Travel Speed in/min(cm/min)
M21-ArC-25	275 / DCEP	27	375 (9.5)	3/4 (19)	Room Temp	300(149)	12 (30.5)
M21-ArC-25	245 / DCEP	26.3	480 (12.2)	3/4 (19)	Room Temp	300(149)	10.8 (27.4)

**Mechanical Properties - Tensile**

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
M21-ArC-25	PE6902	Aged 48 Hrs 220F	81,000 ( 561 )	73,000 ( 506 )	29
M21-ArC-25	PE6727	Aged 48 Hrs 220F	87,000 ( 598 )	78,000 ( 539 )	27

**Mechanical Properties - Impact**

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M21-ArC-25	PE6727	As Welded	0 (-18)	140,154,151 (190,209,205)	148 ( 201 )	Charpy-V-Notch
M21-ArC-25	PE6727	As Welded	-40 (-40)	124,129,132 (168,175,179)	128 ( 174 )	Charpy-V-Notch
M21-ArC-25	PE6902	As Welded	0 (-18)	171,166,187 (232,225,254)	175 ( 237 )	Charpy-V-Notch
M21-ArC-25	PE6902	As Welded	-40 (-40)	133,123,134 (180,167,182)	130 ( 176 )	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test				
PE6902	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms
PE6727	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms

**Chemical Analysis**

Shielding Medium / Ref. No	C	Mn	P	S	Si	Cu	Cr	V	Ni	Mo	Al	Ti	Nb	Co	B	W	Sn	Fe	Sb	N	Mg	Zn	Be	Sb	As	
M21-ArC-25 / CD98052	0.067	1.32	0.011	0.012	0.40	0.04	0.03	0.002	0.34	0.01					0.0029											
M21-ArC-25 / PE6902	0.058	1.48	0.009	0.008	0.38	0.03	0.03	0.002	0.43	< .01					0.0027											

**Diffusible Hydrogen Collected per AWS A4.3**

M21-ArC-25	3.9 ml/100g of weld metal for .052 in diameter 40% relative humidity
M21-ArC-25	3.9 ml/100g of weld metal for .045 in diameter 25% relative humidity

*James A. Owens*

James A. Owens, Q.A. Specialist

Certification and Limited Warranty - Data for the above supplied product are those obtained when welded and tested in accordance with the above specification. All tests for the above classification were satisfied. Other tests and procedures may produce different results.