



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

Product Type: **FabCO Element 71M**  
 Classification: **E71T1-GM H8;E71T1-(M20A4-G, M21A4-G) H8**  
 Specifications: **AWS A5.29;ASME SFA5.29;AWS A5.36**  
 Diameter Tested: **1/16"**  
 Date Tested: **12/20/2018**  
 Date Generated: **1/8/2019**

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-AC-25	290 / DCEP	28	230 (5.8)	3/4 (19)	60(16)	300(149)	12 (30.5)
M21-ArC-10	290 / DCEP	27	240 (6.1)	3/4 (19)	300(149)	300(149)	10 (25.4)

**Mechanical Properties - Tensile**

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong. % in 2"
M21-AC-25	PD5624	Aged 48 Hrs 220F	76,000 ( 523 )	66,000 ( 459 )	27
M21-ArC-10	PD7136	Aged 48 Hrs 220F	74,000 ( 512 )	64,000 ( 445 )	31

**Mechanical Properties - Impact**

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M21-AC-25	PD5624	As Welded	-20 (-29)	62,68,60 (84,92,81)	63 ( 86 )	Charpy-V-Notch
M21-AC-25	PD5624	As Welded	-40 (-40)	62,54,51 (84,73,69)	56 ( 75 )	Charpy-V-Notch
M21-ArC-10	PD7136	As Welded	-40 (-40)	84,82,82 (114,111,111)	83 ( 112 )	Charpy-V-Notch
M21-ArC-10	PD7136	As Welded	-20 (-29)	86,85,95 (117,115,129)	89 ( 120 )	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test			
PD5624	Conforms	Horizontal :	Overhead :	Vertical :	Vertical :
PD7136	Conforms	Horizontal :	Overhead :	Vertical :	Vertical :

**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 / CD35897	0.03	0.15	0.008	0.008	0.58	0.01	0.02	0.02	1.71	< .01															
M20-ArC-10 / CD44964	0.02	0.16	0.005	0.008	0.69	0.01	0.01	0.01	1.68	0.01															

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

M21-ArC-25	4.7 ml/100g of weld metal for 1/16 in diameter 29% relative humidity
M20-ArC-10	7.5 ml/100g of weld metal for 1/16 in diameter 71% relative humidity

*Dave A. Thomas*

Dave Thomas, Quality Assurance Rep.

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.