



## Certificate of Conformance to Requirements for Welding Electrode

**Product Type:** FabCOR 86R  
**Classification:** E70C-6M H4  
**Specifications:** AWS A5.18/A5.18M; ASME SFA 5.18  
**Diameter Tested:** 1/16"  
**Date Tested:** 6/17/2022  
**Date Generated:** 9/13/2022

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	350 / DCEP	27	260 (6.6)	.75 (19)	Room Temp	300(149)	12 (30.5)
M20-ArC-10	350 / DCEP	27	270 (6.9)	.75 (19)	Room Temp	300(149)	12 (30.5)
M22-ArO-5	350 / DCEP	26	260 (6.6)	.75 (19)	Room Temp	300(149)	12 (30.5)

### Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
M21-ArC-25	PE3516	Aged 48 Hrs 220F	84,000 ( 577 )	72,000 ( 497 )	27
M20-ArC-10	PE3517	Aged 48 Hrs 220F	87,000 ( 601 )	76,000 ( 526 )	26
M22-ArO-5	PE3518	Aged 48 Hrs 220F	82,000 ( 564 )	71,000 ( 488 )	29

### Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M21-ArC-25	PE3516	As Welded	-20 (-29)	40,32,35 (54,43,47)	36 ( 48 )	Charpy-V-Notch
M21-ArC-25	PE3516	As Welded	-40 (-40)	27,27,20 (37,37,27)	25 ( 33 )	Charpy-V-Notch
M20-ArC-10	PE3517	As Welded	-20 (-29)	68,63,66 (92,85,89)	66 ( 89 )	Charpy-V-Notch
M20-ArC-10	PE3517	As Welded	-40 (-40)	35,39,54 (47,53,73)	43 ( 58 )	Charpy-V-Notch
M22-ArO-5	pe3518	As Welded	-20 (-29)	100,85,92 (136,115,125)	92 ( 125 )	Charpy-V-Notch
M22-ArO-5	pe3518	As Welded	-40 (-40)	63,88,79 (85,119,107)	77 ( 104 )	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test					
PE3516	Conforms	Horizontal :		Overhead :		Vertical :	
PE3517	Conforms	Horizontal :		Overhead :		Vertical :	
PE3518	Conforms	Horizontal :		Overhead :		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 / PE3516	0.04	1.67	0.012	0.011	0.89	0.08	0.05	< .01	0.03	0.01															
M20-ArC-10 / PE3517	0.04	1.62	0.013	0.011	0.82	0.09	0.05	< .01	0.03	0.01															
M22-ArO-5 / PE3518	0.03	1.48	0.013	0.011	0.77	0.08	0.04	< .01	0.03	0.01															

### Diffusible Hydrogen Collected per AWS A4.3

M21-ArC-25	1.9 ml/100g of weld metal for 1/16 in diameter 26% relative humidity
M22-ArO-5	3.6 ml/100g of weld metal for 1/16 in diameter 47% relative humidity
M20ArC-10	3.6 ml/100g of weld metal for 1/16 in diameter 46% relative humidity

*Dave 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.

