



Certificate of Conformance to Requirements for Welding Electrode

Product Type: FabCOR Edge Ni1
Classification: E80C-Ni1 H4
Specifications: AWS A5.28/A5.28M; ASME SFA 5.28
Diameter Tested: 1/16"
Date Tested: 12/2/2022
Date Generated: 12/19/2022

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)
M20-ArC-10	350 / DCEP	27	270 (6.9)	.75 (19)	300(149)	300(149)	12 (30.5)
M13-ArO-2	350 / DCEP	2727	240 (6.1)	.75 (19)	300(149)	300(149)	12 (30.5)
M12-ArC-5	350 / DCEP	27	240 (6.1)	.75 (19)	300(149)	300(149)	12 (30.5)
M22-ArO-5	350 / DCEP	26	270 (6.9)	.75 (19)	300(149)	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"
M20-ArC-10	PE4321	Aged 48 Hrs 220F	88,000 (604)	79,000 (546)	26
M13-ArO-2	PE4327	Aged 48 Hrs 220F	89,000 (614)	79,000 (547)	25
M12-ArC-5	PE4339	Aged 48 Hrs 220F	88,000 (605)	74,000 (509)	25
M22-ArO-5	PE4348	Aged 48 Hrs 220F	87,000 (599)	76,000 (521)	25

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M20-ArC-10	PE4321	As Welded	-50 (-46)	47,54,51 (64,73,69)	51 (69)	Charpy-V-Notch
M13-ArO-2	PE4327	As Welded	-50 (-46)	47,47,52 (64,64,70)	49 (66)	Charpy-V-Notch
M12-ArC-5	PE4339	As Welded	-50 (-46)	50,51,48 (68,69,65)	50 (67)	Charpy-V-Notch
M22-ArO-5	PE4348	As Welded	-50 (-46)	58,56,56 (79,76,76)	57 (77)	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test					
PE4321	Conforms	Horizontal :	Overhead :	Vertical :			
PE4327	Conforms	Horizontal :	Overhead :	Vertical :			
PE4339	Conforms	Horizontal :	Overhead :	Vertical :			
PE4348	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
M20-ArC-10 / PE4321	0.07	1.35	0.016	0.016	0.53	0.05	0.03	< .01	0.91	0.01					0.0041										
M13-ArO-2 / PE4327	0.06	1.45	0.015	0.014	0.59	0.05	0.03	< .01	0.92	0.01					0.0043										
M12-ArC-5 / PE4339	0.06	1.48	0.011	0.012	0.66	0.04	0.03	< .01	0.95	0.01					0.0044										
M22-ArO-5 / PE4348	0.04	1.31	0.014	0.012	0.56	0.04	0.03	< .01	0.90	0.01					0.0041										

Diffusible Hydrogen Collected per AWS A4.3

M20-ArC-10	2.9 ml/100g of weld metal for 1/16 in diameter 50% relative humidity
M12-ArC-5	3.6 ml/100g of weld metal for 1/16 in diameter 45% relative humidity
M22-ArO-5	3.2 ml/100g of weld metal for 1/16 in diameter 34% relative humidity
M13-ArO-2	3.4 ml/100g of weld metal for 1/16 in diameter 34% 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.