



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: 8/12/2021
Date Generated: 9/22/2021

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)
M22-ArO-5	350 / DCEP	26-27	240 (6.1)	.75 (19)	300(149)	300(149)	12 (30.5)
M20-ArC-10	350 / DCEP	28	270 (6.9)	.75 (19)	300(149)	300(149)	12 (30.5)
M13-ArO-2	350 / DCEP	26-27	240 (6.1)	.75 (19)	300(149)	300(149)	12 (30.5)
M12-ArC-5	350 / DCEP	27	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"
M22-ArO-5	PE2247	Aged 48 Hrs 220F	87,000 (599)	78,000 (536)	26
M20-ArC-10	PE2288	Aged 48 Hrs 220F	85,000 (587)	75,000 (518)	28
M13-ArO-2	PE2342	Aged 48 Hrs 220F	89,000 (615)	80,000 (551)	26
M12-ArC-5	PE2408	Aged 48 Hrs 220F	90,000 (619)	80,000 (553)	29

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M22-ArO-5	PE2247	As Welded	-50 (-46)	84,100,70 (114,136,95)	85 (115)	Charpy-V-Notch
M20-ArC-10	PE2288	As Welded	-50 (-46)	63,65,61 (85,88,83)	63 (85)	Charpy-V-Notch
M13-ArO-2	PE2342	As Welded	-50 (-46)	58,52,57 (79,70,77)	56 (75)	Charpy-V-Notch
M12-ArC-5	PE2408	As Welded	-50 (-46)	31,37,39 (42,50,53)	36 (48)	Charpy-V-Notch

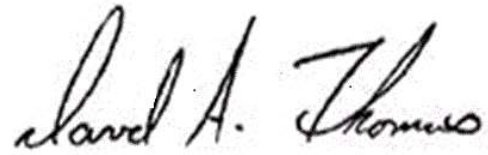
Ref.No.	Radiographic Inspection	Fillet Weld Test					
PE2247	Conforms	Horizontal :		Overhead :		Vertical :	
PE2288	Conforms	Horizontal :		Overhead :		Vertical :	
PE2342	Conforms	Horizontal :		Overhead :		Vertical :	
PE2408	Conforms	Horizontal :		Overhead :		Vertical :	

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
M22-ArO-5 / PE2247	0.05	1.3	0.011	0.008	0.54	0.02	0.04	0.01	0.91	< .1					0.0035										
M20-ArC-10 / PE2288	0.05	1.3	0.010	0.007	0.58	0.02	0.04	0.01	0.90	< .1					0.0033										
M13-ArO-2 / PE2342	0.06	1.4	0.011	0.008	0.63	0.02	0.04	0.01	0.89	< .1					0.0036										
M12-ArC-5 / PE2408	0.06	1.4	0.012	0.008	0.63	0.02	0.04	0.01	0.88	< .1					0.0039										

Diffusible Hydrogen Collected per AWS A4.3

M22-ArO-5	3.9 ml/100g of weld metal for 1/16 in diameter 27% relative humidity
M13-ArO-2	4.0 ml/100g of weld metal for 1/16 in diameter 27% relative humidity
M20-ArC-10	3.0 ml/100g of weld metal for 1/16 in diameter 27% relative humidity
M14-ArC-5	3.7 ml/100g of weld metal for 1/16 in diameter 27% relative humidity

A handwritten signature in black ink that reads "David A. Thomas". The signature is written in a cursive style with a large, looped initial 'D'.

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.