



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: 8/20/2020
Date Generated: 9/30/2020

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	28	270 (6.9)	.75 (19)	300(149)	300(149)	12 (30.5)
M13-ArO-2	350 / DCEP	27	270 (6.9)	.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)
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	pe1012	Aged 48 Hrs 220F	91,000 (628)	78,000 (541)	26
M13-ArO-2	PE1013	Aged 48 Hrs 220F	96,000 (658)	86,000 (590)	27
M12-ArC-5	PE1015	Aged 48 Hrs 220F	94,000 (648)	79,000 (543)	23
M22-ArO-5	PE1024	Aged 48 Hrs 220F	89,000 (616)	81,000 (559)	26

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M20-ArC-10	PE1012	As Welded	-50 (-46)	48,52,43 (65,70,58)	48 (65)	Charpy-V-Notch
M13-ArO-2	PE1013	As Welded	-50 (-46)	47,47,41 (64,64,56)	45 (61)	Charpy-V-Notch
M12-ArC-5	PE1015	As Welded	-50 (-46)	39,39,34 (53,53,46)	37 (51)	Charpy-V-Notch
M22-ArO-5	PE1024	As Welded	-50 (-46)	53,54,52 (72,73,70)	53 (72)	Charpy-V-Notch

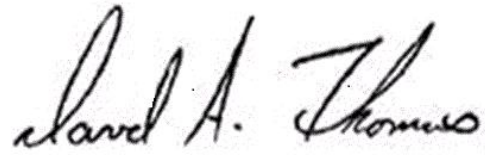
Ref.No.	Radiographic Inspection	Fillet Weld Test					
PE1012	Conforms	Horizontal :		Overhead :		Vertical :	
PE1013	Conforms	Horizontal :		Overhead :		Vertical :	
PE1015	Conforms	Horizontal :		Overhead :		Vertical :	
PE1024	Conforms	Horizontal :		Overhead :		Vertical :	

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
M12-ArC-5 / CD66294	0.05	1.49	0.010	0.010	0.64	0.04	0.03	< .01	0.99	0.01															
M20-ArC-10 / CD66674	0.04	1.30	0.008	0.008	0.66	0.03	0.03	0.01	1.06	0.01															
M13-ArO-2 / CD66675	0.05	1.39	0.008	0.008	0.72	0.03	0.03	0.01	1.09	0.01															
M22-ArO-5 / PE1024	0.05	1.43	0.008	0.007	0.64	0.03	0.04	0.01	0.98	< .01															

Diffusible Hydrogen Collected per AWS A4.3

M12-ArC-5	2.1 ml/100g of weld metal for 1/16 in diameter 42% relative humidity
M22-ArO-5	2.6 ml/100g of weld metal for 1/16 in diameter 42% relative humidity
M20-ArC-10	4.0 ml/100g of weld metal for 1/16 in diameter 46% relative humidity
M13-ArO-2	3.7 ml/100g of weld metal for 1/16 in diameter 22% relative humidity

A handwritten signature in black ink that reads "David A. Thomas". The signature is written in a cursive style with a large initial 'D' and 'T'.

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.