



Certificate of Conformance to Requirements for Welding Electrode

Product Type: FabCO 115K3
Classification: E110T5-K3C; E110T5-K3M H4
Specifications: AWS A5.29/A5.29M; ASME SFA 5.29
Diameter Tested: 1/16"; 3/32"
Date Tested: 11/10/2020
Date Generated: 11/13/2020

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)
C1 (100% CO2)	300 / DCEP	27	320 (8.1)	1 (25)	300(149)	300(149)	10 (25.4)
M21-ArC-25	300 / DCEP	26	320 (8.1)	1 (25)	300(149)	300(149)	10 (25.4)
M21-ArC-25	400 / DCEP	26	165 (4.2)	1 (25)	300(149)	300(149)	15 (38.1)
C1 (100% CO2)	400 / DCEP	25	175 (4.4)	1 (25)	300(149)	300(149)	15 (38.1)

Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
M21-ArC-25	PE1435	Aged 48 Hrs 220F	112,000 (772)	100,000 (687)	23
C1 (100% CO2)	PE1519	Aged 48 Hrs 220F	112,000 (772)	104,000 (717)	22
M21-ArC-25	PE1414	Aged 48 Hrs 220F	117,000 (807)	104,000 (717)	21
C1 (100% CO2)	PE1443	Aged 48 Hrs 220F	113,000 (779)	98,000 (674)	23

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
C1 (100% CO2)	PE1413	As Welded	-60 (-51)	51,49,52 (69,66,70)	51 (69)	Charpy-V-Notch
M21-ArC-25	PE1414	As Welded	-60 (-51)	45,52,49 (61,70,66)	49 (66)	Charpy-V-Notch
M21-ArC-25	PE1435	As Welded	-60 (-51)	63,65,66 (85,88,89)	65 (88)	Charpy-V-Notch
C1 (100% CO2)	PE1519	As Welded	-60 (-51)	66,67,71 (89,91,96)	68 (92)	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test			
PE1435	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
PE1519	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
PE1413	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
PE1414	Conforms	Horizontal :	Conforms	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
C1 (100% CO2) / PE1413	0.06	1.60	0.006	0.007	0.48	0.02	0.04	0.01	2.00	0.39															
M21-ArC-25 / PE1414	0.08	1.70	0.007	0.008	0.50	0.02	0.04	0.01	2.08	0.41															
M21-ArC-25 / PE1435	0.08	1.58	0.008	0.010	0.43	0.03	0.07	0.01	1.99	0.36															
C1 (100% CO2) / PE1519	0.06	1.65	0.008	0.011	0.46	0.03	0.07	0.01	2.04	0.37															

Diffusible Hydrogen Collected per AWS A4.3

M21-ArC-25	2.4 ml/100g of weld metal for 3/32 in diameter 19% relative humidity
C1 (100% CO2)	1.8 ml/100g of weld metal for 3/32 in diameter 19% relative humidity
C1 (100% CO2)	1.1 ml/100g of weld metal for 1/16 in diameter 23% relative humidity
M21-ArC-25	1.6 ml/100g of weld metal for 1/16 in diameter 23% 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.