



Certificate of Conformance to Requirements for Welding Electrode

Product Type: FabCO Excel-Arc 71
Classification: E71T-1C, E71T-1M, E71T-9C, E71T-9M H8
Specifications: AWS A5.20/A5.20M; ASME SFA 5.20
Diameter Tested: .045"; 5/64"
Date Tested: 8/5/2020
Date Generated: 4/8/2021

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)
M21-ArC-25	325 / DCEP	25	180 (4.6)	1 (25)	Room Temp	300(149)	12 (30.5)
C1 (100% C02)	325 / DCEP	26	180 (4.6)	1 (25)	Room Temp	300(149)	12 (30.5)
C1 (100% C02)	275 / DCEP	28	490 (12.4)	3/4 (19)	Room Temp	300(149)	10 (25.4)
M21-ArC-25	275 / DCEP	27	490 (12.4)	3/4 (19)	Room Temp	300(149)	10 (25.4)

Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
M21-ArC-25	PD9362	Aged 48 Hrs 220F	90,000 (618)	83,000 (570)	28
C1 (100% C02)	PD9368	Aged 48 Hrs 220F	81,000 (561)	76,000 (523)	28
C1 (100% C02)	PD9869	Aged 48 Hrs 220F	80,000 (553)	71,000 (492)	27
M21-ArC-25	PD9870	Aged 48 Hrs 220F	88,000 (607)	82,000 (568)	27

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
M21-ArC-25	PD9362	As Welded	0 (-18)	103,100,85 (140,136,115)	96 (130)	Charpy-V-Notch
M21-ArC-25	PD9362	As Welded	-20 (-29)	72,83,92 (98,113,125)	82 (112)	Charpy-V-Notch
C1 (100% C02)	PD9368	As Welded	0 (-18)	86,59,82 (117,80,111)	76 (103)	Charpy-V-Notch
C1 (100% C02)	PD9368	As Welded	-20 (-29)	49,54,63 (66,73,85)	55 (75)	Charpy-V-Notch
C1 (100% C02)	PD9869	As Welded	0 (-18)	78,71,40 (106,96,54)	63 (85)	Charpy-V-Notch
C1 (100% C02)	PD9869	As Welded	-20 (-29)	75,90,79 (102,122,107)	81 (110)	Charpy-V-Notch
M21-ArC-25	PD9870	As Welded	0 (-18)	67,70,106 (91,95,144)	81 (110)	Charpy-V-Notch
M21-ArC-25	PD9870	As Welded	-20 (-29)	69,78,91 (94,106,123)	79 (108)	Charpy-V-Notch

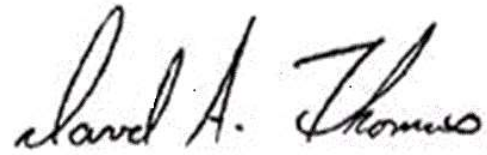
Ref.No.	Radiographic Inspection	Fillet Weld Test					
PD9362	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms	
PD9368	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms	
PD9869	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms	
PD9870	Conforms	Horizontal :	Overhead :	Conforms	Vertical :	Conforms	

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 / CD60141	0.01	1.32	0.012	0.010	0.71	0.04	0.04	0.02	0.01	0.01				0.0042											
M21-ArC-25 / CD63047	0.03	1.47	0.010	0.007	0.61	0.02	0.04	0.02	0.01	< .01				0.0059											
C1 (100% C02) / PD9368	0.03	1.37	0.009	0.006	0.47	0.04	0.04	0.02	0.02	< .01				0.0051											
C1 (100% C02) / PD9869	0.05	1.30	0.011	0.011	0.53	0.08	0.06	0.02	0.03	0.01				0.0042											

Diffusible Hydrogen Collected per AWS A4.3

M21-ArC-25	5.2 ml/100g of weld metal for 5/64 in diameter 44% relative humidity
C1 (100% CO2)	5.6 ml/100g of weld metal for 5/64 in diameter 44% relative humidity
C1 (100% CO2)	6.3 ml/100g of weld metal for .045 in diameter 58% relative humidity
M21-ArC-25	6.2 ml/100g of weld metal for .045 in diameter 58% 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' 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.