Certificate of Conformance to Requirements for Welding Electrode

Product Type:	EXCEL-ARC 71 .045 33 SP
Classification:	E71T-1C/M H8,E71T-9C/M H8
Specifications:	AWS A5.20, ASME SFA 5.20
Diameter Tested:	.035 1/16 5/64
Date Tested:	6/30/2015
Date Generated:	8/20/2015

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)
SG-AC-25	325 / DCEP	26	150 (3.8)	1 (25)	60(16)	300(149)	9 (22.9)
SG-AC-25	325 / DCEP	26	155 (3.9)	1 (25)	60(16)	300(149)	10 (25.4)
SG-AC-25	200 / DCEP	28	650 (16.5)	1/2 (13)	60(16)	300(149)	10 (25.4)
SG-C	200 / DCEP	30	650 (16.5)	1/2 (13)	60(16)	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"
SG-C	PC6287	Aged 48 Hrs 200F	84,000 (578)	78,000 (534)	27
SG-AC-25	PC6288	Aged 48 Hrs 200F	88,000 (610)	82,000 (565)	26
SG-AC-25	PC6351	Aged 48 Hrs 200F	84,000 (577)	77,000 (529)	28
SG-C	PC6353	Aged 48 Hrs 200F	75,000 (516)	64,000 (445)	30

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
SG-C 100% CO2	PC6083	As Welded	-30 (-34)	133,135,122 (180,183,165)	130 (176)	Charpy-V-Notch
SG-C	PC6287	As Welded	0 (-18)	104,93,87 (141,126,118)	95 (128)	Charpy-V-Notch
SG-C	PC6287	As Welded	-20 (-29)	97,84,94 (132,114,127)	92 (124)	Charpy-V-Notch
SG-AC-25	PC6288	As Welded	0 (-18)	106,109,107 (144,148,145)	107 (146)	Charpy-V-Notch
SG-AC-25	PC6288	As Welded	-20 (-29)	98,99,100 (133,134,136)	99 (134)	Charpy-V-Notch
SG-AC-25	PC6351	As Welded	0 (-18)	40,88,73 (54,119,99)	67 (91)	Charpy-V-Notch
SG-AC-25	PC6351	As Welded	-20 (-29)	57,51,46 (77,69,62)	51 (70)	Charpy-V-Notch
SG-C	PC6558	As Welded	0 (-18)	60,34,45 (81,46,61)	46 (63)	Charpy-V-Notch
SG-C	PC6558	As Welded	-20 (-29)	52,22,79 (70,30,107)	51 (69)	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test					
PC6288	Non Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
PC6349	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
PC6351	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
PC6353	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
SG-AC-25 / CB95847	< .01	1.23	0.009	0.006	0.55	0.03	0.04	0.02	0.01	< .01	-	-	-	-	-	-	-	-	-	-	-	-	-
SG-C / PC6287	0.03	1.40	0.010	0.008	0.51	0.03	0.03	0.02	0.02	< .01	-	-	-	-	-	-	-	-	-	-	-	-	-
SG-AC-25 / PC6288	0.04	1.44	0.010	0.009	0.59	0.03	0.03	0.02	0.01	< .01	-	-	-	-	-	-	-	-	-	-	-	-	-
SG-C / PC6558	0.02	1.48	0.007	0.008	0.47	0.03	0.03	0.02	0.01	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-

Diffusible Hydrogen Collected per AWS A4.3

SC-C 100% CO2	6.4 ml/100g of weld metal for .035 in diameter 72% relative humidity
SC-C 100% CO2	6.7 ml/100g of weld metal for 5/64 in diameter 80% relative humidity
SG-AC-25	7.2 ml/100g of weld metal for 5/64 in diameter 80% relative humidity
SG-AC-25	4.2 ml/100g of weld metal for .035 in diameter 80% relative humidity

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. Hobart Brothers produces welding consumables under continuing quality assurance programs audited and approved by the American Bureau of Shipping ("ABS").