



Certificate of Conformance to Requirements for Welding Electrode

Hobart

Product Type: Hoballoy 8018C3
 Classification: E8018-C3 H4
 Specifications: AWS A5.5/A5.5M:2014
 Diameter Tested:
 Date Tested: 9/15/2016
 Date Generated: 12/1/2016

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 ISO9000, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

Test Settings

Amps	Volts	Size	Polarity	Preheat	Interpass	Travel Speed
240	26	3/16X14 in	AC	250 F (121 C)	250 F (121 C)	+/- 1 in/min
225	26	3/16X14 in	DCEP	250 F (121 C)	250 F (121 C)	+/- 1 in/min
200	24	5/32X14 in	AC	225 F (107 C)	225 F (107 C)	+/- 1 in/min
185	24	5/32X14 in	DCEP	225 F (107 C)	225 F (107 C)	+/- 1 in/min
340	27	1/4X18 in	DCEP	225 F (107 C)	250 F (121 C)	+/- 1 in/min
355	26	1/4X18 in	AC	250 F (121 C)	250 F (121 C)	+/- 1 in/min

Mechanical Properties - Tensile

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong.% in 2"
3/16X14 in / AC	PD0777	Aged 48 Hrs 220F	92,000 psi (637 Mpa)	80,000 psi (550 Mpa)	26
3/16X14 in / DCEP	PD0778	Aged 48 Hrs 220F	92,000 psi (632 Mpa)	79,000 psi (547 Mpa)	26
5/32X14 in / AC	PD0801	Aged 48 Hrs 220F	83,000 psi (572 Mpa)	71,000 psi (487 Mpa)	27
5/32X14 in / DCEP	pd0802	Aged 48 Hrs 220F	80,000 psi (550 Mpa)	68,000 psi (467 Mpa)	27
1/4X18 in / DCEP	pd1562	Aged 48 Hrs 220F	87,000 psi (601 Mpa)	76,000 psi (521 Mpa)	28
1/4X18 in / AC	PD2172	Aged 48 Hrs 220F	90,000 psi (621 Mpa)	79,000 psi (546 Mpa)	27

Mechanical Properties - Impact

Size / Polarity	Ref. No.	Testing Conditions	Test Temp.	Individuals	Average	Type
3/16X14 in / AC	PD0777	As Welded	-40 F (-40 C)	67,67,66 ft.lb	67 ft.lb (90 J)	Charpy-V-Notch
3/16X14 in / DCEP	PD0778	As Welded	-40 F (-40 C)	68,77,66 ft.lb	70 ft.lb (95 J)	Charpy-V-Notch
5/32X14 in / AC	PD0801	As Welded	-40 F (-40 C)	92,100,104 ft.lb	99 ft.lb (134 J)	Charpy-V-Notch
5/32X14 in / DCEP	PD0802	As Welded	-40 F (-40 C)	99,85,102 ft.lb	95 ft.lb (129 J)	Charpy-V-Notch
1/4X18 in / DCEP	PD1562	As Welded	-40 F (-40 C)	85,82,75 ft.lb	81 ft.lb (109 J)	Charpy-V-Notch
1/4X18 in / AC	PD2172	As Welded	-40 F (-40 C)	60,60,67 ft.lb	62 ft.lb (85 J)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
3/16X14 in / AC	PD0777	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
3/16X14 in / DCEP	PD0778	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / AC	PD0801	Conforms	Horizontal :		Overhead :	Vertical : Conforms
5/32X14 in / DCEP	PD0802	Conforms	Horizontal :		Overhead :	Vertical : Conforms
1/4X18 in / DCEP	PD1562	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / AC	PD2172	Conforms	Horizontal :	Conforms	Overhead :	Vertical :

Chemical Analysis

Size / Polarity / 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
3/16X14 in / DCEP / CD08569	0.06	0.91	0.01	0.01	0.35		0.06	< .01	1.00	0.10													
5/32X14 in / DCEP / CD10522	0.06	1.01	0.01	0.01	0.36		0.06	< .01	0.99	0.11													
1/4X18 in / DCEP / CD14991	0.05	1.07	0.01	0.01	0.25		0.05	< .01	0.97	0.17													

Size: 3/16X14 in	Total H2O Method: RC412 - As Received	Total Coating Moisture: 0.13	Ref. No.: CD08569
Size: 5/32X14 in	Total H2O Method: RC412 - As Received	Total Coating Moisture: 0.17	Ref. No.: CD10522
Size: 1/4X18 in	Total H2O Method: RC412 - As Received	Total Coating Moisture: 0.16	Ref. No.: CD14991

Diffusible Hydrogen Collected per AWS A4.3 - ml/100 g weld metal

n/a	2.7	ml/100g	For	3/16X14 in	dia
n/a	2.9	ml/100g	For	5/32X14 in	dia
n/a	3.4	ml/100g	For	1/4X18 in	dia

David A. Thomas

Dave Thomas , Quality Assurance Rep.

The information 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").