



Certificate of Conformance to Requirements for Welding Electrode

Product Type: HOBALLOY 8018C3
Classification: E8018-C3 H4
Specifications: AWS A5.5/A5.5M; ASME SFA 5.5
Diameter Tested:
Date Tested: 4/7/2020
Date Generated: 7/22/2020

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.

MADE IN THE U.S. OF U.S. AND IMPORTED MATERIALS.

Test Settings

Size	Polarity	Amps	Volts	Preheat F(C)	Interpass F(C)
5/32X14 in	AC	190	24	225 (107)	225 (107)
3/16X14 in	AC	240	26	225 (107)	250 (121)
3/16X14 in	DCEP	225	25	225 (107)	250 (121)
5/32X14 in	DCEP	170	24-26	225 (107)	225 (107)
1/4X18 in	AC	330	27	225 (107)	250 (121)
1/4X18 in	DCEP	320	27	225 (107)	250 (121)

Mechanical Properties - Tensile

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength psi(MPa)	Yield Strength psi(MPa)	Elong. % in 2"
5/32X14 in / AC	PD9075	Aged 48 Hrs 220F	82,000 (567)	70,000 (483)	28
5/32X14 in / DCEP	PD9205	Aged 48 Hrs 220F	83,000 (574)	72,000 (496)	30
1/4X18 in / AC	PD9382	Aged 48 Hrs 220F	87,000 (598)	75,000 (518)	27
1/4X18 in / DCEP	PD9383	Aged 48 Hrs 220F	84,000 (578)	72,000 (496)	27
3/16X14 in / DCEP	PD9099	Aged 48 Hrs 220F	88,000 (605)	73,000 (505)	27
3/16X14 in / AC	PD9132	Aged 48 Hrs 220F	92,000 (631)	78,000 (538)	27

Mechanical Properties - Impact

Size / Polarity	Ref. No.	Testing Conditions	Test Temp. F(C)	Individuals ft.lb.(J)	Average ft.lb.(J)	Type
5/32X14 in / AC	PD9075	As Welded	-40 F (-40 C)	59,34,67 (80,46,91)	53 (72)	Charpy-V-Notch
3/16X14 in / AC	PD9098	As Welded	-40 F (-40 C)	67,68,72 (91,92,98)	69 (94)	Charpy-V-Notch
3/16X14 in / DCEP	PD9099	As Welded	-40 F (-40 C)	77,81,90 (104,110,122)	83 (112)	Charpy-V-Notch
5/32X14 in / DCEP	PD9133	As Welded	-40 F (-40 C)	89,97,102 (121,132,138)	96 (130)	Charpy-V-Notch
1/4X18 in / AC	PD9382	As Welded	-40 F (-40 C)	54,69,57 (73,94,77)	60 (81)	Charpy-V-Notch
1/4X18 in / DCEP	PD9383	As Welded	-40 F (-40 C)	73,88,59 (99,119,80)	73 (99)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / AC	PD9075	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / DCEP	PD9133	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
1/4X18 in / AC	PD9382	Conforms	Horizontal :	Overhead :	Vertical :	
1/4X18 in / DCEP	PD9383	Conforms	Horizontal :	Overhead :	Vertical :	
3/16X14 in / AC	PD9098	Conforms	Horizontal :	Overhead :	Vertical :	
3/16X14 in / DCEP	PD9099	Conforms	Horizontal :	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	Sb	As
5/32X14 in / DCEP / CD60597	0.06	0.89	0.01	0.01	0.28		0.05	0.01	0.84	0.10															
3/16X14 in / DCEP / CD61090	0.05	1.06	0.01	0.01	0.38		0.05	0.01	0.96	0.11															
1/4X18 in / DCEP / CD62843	0.05	1.11	0.01	0.02	0.20		0.05	0.01	1.02	0.16															
5/32X14 in / AC / PD9075	0.04	0.92	0.01	0.02	0.28		0.03	< .01	0.80	0.09															
3/16X14 in / AC / PD9098	0.06	1.10	0.01	0.01	0.53		0.05	< .01	0.93	0.11															
1/4X18 in / AC / PD9382	0.06	1.16	0.01	0.02	0.26		0.05	< .01	0.97	0.16															

5/32X14 in / CD60597	Total H2O Method : Train - As Received	Total Coating Moisture : 0.08
3/16X14 in / CD61090	Total H2O Method : Train - As Received	Total Coating Moisture : 0.097
1/4X18 in / CD62843	Total H2O Method : Train - As Received	Total Coating Moisture : 0.055

Diffusible Hydrogen Collected per AWS A4.3

2.6 ml/100g of weld metal for 5/32X14 in diameter 43% relative humidity

3.9 ml/100g of weld metal for 3/16X14 in diameter 42% relative humidity

2.7 ml/100g of weld metal for 1/4X18 in diameter 46% 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.