



Certificate of Conformance to Requirements for Welding Electrode

Product Type: HOBALLOY 8018C1
Classification: E8018-C1 H4
Specifications: AWS A5.5/A5.5M; ASME SFA 5.5
Diameter Tested: 5/32" - 3/16"
Date Tested: 2/4/2021
Date Generated: 2/10/2021

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.

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	200	24	225 (107)	225 (107)
5/32X14 in	DCEP	180	26 - 24	225 (107)	225 (107)
3/16X14 in	AC	240	27	225°F ()	225 (107)
3/16X14 in	DCEP	225	27	225 (107)	225 (107)

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	PE1603	SR 1 Hr @ 1125F	93,000 (641)	81,000 (561)	25
5/32X14 in / DCEP	PE1604	SR 1 Hr @ 1125F	88,000 (604)	75,000 (518)	26
3/16X14 in / AC	PE1605	SR 1 Hr @ 1125F	88,000 (605)	76,000 (525)	27
3/16X14 in / DCEP	PE1606	SR 1 Hr @ 1125F	86,000 (593)	75,000 (515)	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	PE1603	SR 1 Hr @ 1125F	-75 F (-59 C)	56,54,55 (76,73,75)	55 (75)	Charpy-V-Notch
5/32X14 in / DCEP	PE1604	SR 1 Hr @ 1125F	-75 F (-59 C)	69,73,67 (94,99,91)	70 (94)	Charpy-V-Notch
3/16X14 in / AC	PE1605	SR 1 Hr @ 1125F	-75 F (-59 C)	51,39,52 (69,53,70)	47 (64)	Charpy-V-Notch
3/16X14 in / DCEP	PE1606	SR 1 Hr @ 1125F	-75 F (-59 C)	64,67,76 (87,91,103)	69 (94)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / AC	PE1603	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / DCEP	PE1604	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
3/16X14 in / AC	PE1605	Conforms	Horizontal :	Overhead :	Vertical :	
3/16X14 in / DCEP	PE1606	Conforms	Horizontal :	Overhead :	Vertical :	

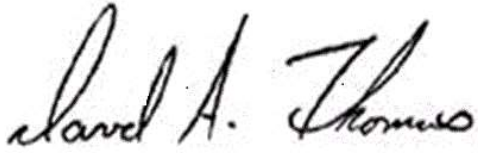
Chemical Analysis

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
3/16X14 in / AC / CD69732	0.05	1.09	0.01	0.01	0.44				2.40																
5/32X14 in / AC / PE1603	0.05	1.16	0.01	0.01	0.57				2.19																
5/32X14 in / DCEP / PE1604	0.04	1.11	0.01	0.01	0.52				2.26																
3/16X14 in / DCEP / PE1606	0.04	1.11	0.01	0.01	0.51				2.00																

3/16X14 in / CD69732	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.097
5/32X14 in / PE1603	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.16
5/32X14 in / PE1604	Total H2O Method : Train - As Received	Total Coating Moisture : 0.097
3/16X14 in / PE1606	Total H2O Method : Train - As Received	Total Coating Moisture : 0.103

Diffusible Hydrogen Collected per AWS A4.3

3.1 ml/100g of weld metal for 3/16X14 in diameter 19% relative humidity
2.8 ml/100g of weld metal for 5/32X14 in diameter 19% relative humidity

A handwritten signature in black ink that reads "David A. Thomas". The signature is written in a cursive style with a large 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.