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:	**1/8"-5/32"**
Date Tested:	**11/07/2024**
Date Generated:	**12/11/2024**

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	DCEP	185	26 - 24	225 (107)	225 (107)
1/8X14 in	DCEP	140	26 - 23 1/2	225 (107)	225 (107)
5/32X14 in	AC	200	26 - 24	225 (107)	225 (107)
1/8X14 in	AC	150	26 - 23 1/2	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"
1/8X14 in / DCEP	PE8964	SR 1 Hr @ 1125F	88,000 (605)	73,000 (506)	**30**
1/8X14 in / AC	PE8981	SR 1 Hr @ 1125F	90,000 (618)	75,000 (518)	**27**
5/32X14 in / DCEP	PE8912	SR 1 Hr @ 1125F	93,000 (641)	82,000 (563)	**26**
5/32X14 in / AC	PE8976	SR 1 Hr @ 1125F	91,000 (629)	79,000 (542)	**26**

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 / DCEP	PE8912	SR 1 Hr @ 1125F	-75 F (-59 C)	51,65,67 (69,88,91)	61 (83)	Charpy-V-Notch
1/8X14 in / DCEP	PE8964	SR 1 Hr @ 1125F	-75 F (-59 C)	96,94,98 (130,127,133)	96 (130)	Charpy-V-Notch
5/32X14 in / AC	PE8976	SR 1 Hr @ 1125F	-75 F (-59 C)	73,70,72 (99,95,98)	72 (97)	Charpy-V-Notch
1/8X14 in / AC	PE8981	SR 1 Hr @ 1125F	-75 F (-59 C)	84,85,82 (114,115,111)	84 (113)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test					
1/8X14 in / DCEP	PE8964	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
1/8X14 in / AC	PE8981	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
5/32X14 in / DCEP	PE8912	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms
5/32X14 in / AC	PE8976	Conforms	Horizontal :		Overhead :	Conforms	Vertical :	Conforms

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 / PE8912	0.05	1.24	0.01	0.01	0.48				2.08																
5/32X14 in / AC / PE8943	0.04	1.13	0.01	0.01	0.43				2.06																
1/8X14 in / DCEP / PE8964	0.04	1.13	0.01	0.01	0.40				2.08																
1/8X14 in / AC / PE8981	0.04	1.08	0.01	0.01	0.39				2.00																

5/32X14 in / PE8912	Total H2O Method : Train - As Received	Total Coating Moisture : 0.072
5/32X14 in / PE8943	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.14
1/8X14 in / PE8964	Total H2O Method : Train - As Received	Total Coating Moisture : 0.127
1/8X14 in / PE8981	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.165

Diffusible Hydrogen Collected per AWS A4.3

2.8 ml/100g of weld metal for 5/32X14 in diameter 15% relative humidity

2.4 ml/100g of weld metal for 5/32X14 in diameter 16% relative humidity

2.8 ml/100g of weld metal for 1/8X14 in diameter 18% relative humidity

2.2 ml/100g of weld metal for 1/8X14 in diameter 18% relative humidity

James A. Owens, Q.A. Specialist ,

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.