



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: 1/4/2022
Date Generated: 1/27/2023

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	180	26 - 24	225 (107)	225 (107)
5/32X14 in	AC	190	26 - 24	225 (107)	225 (107)
3/16X14 in	ac	225	27	225 (107)	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 / DCEP	PE4780	SR 1 Hr @ 1125F	87,000 (601)	73,000 (503)	27
5/32X14 in / AC	PE4792	SR 1 Hr @ 1125F	88,000 (605)	76,000 (521)	28
3/16X14 in / ac	PE4871	SR 1 Hr @ 1125F	88,000 (610)	74,000 (510)	25
3/16X14 in / DCEP	PE4872	SR 1 Hr @ 1125F	87,000 (600)	74,000 (514)	28

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	PE4780	SR 1 Hr @ 1125F	-75 F (-59 C)	81,92,80 (110,125,108)	84 (114)	Charpy-V-Notch
5/32X14 in / AC	PE4792	SR 1 Hr @ 1125F	-75 F (-59 C)	80,67,80 (108,91,108)	76 (103)	Charpy-V-Notch
3/16X14 in / ac	PE4871	SR 1 Hr @ 1125F	-75 F (-59 C)	53,57,53 (72,77,72)	54 (74)	Charpy-V-Notch
3/16X14 in / DCEP	PE4872	SR 1 Hr @ 1125F	-75 F (-59 C)	68,50,66 (92,68,89)	61 (83)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / DCEP	PE4780	Conforms	Horizontal :	Overhead :	Conforms	Vertical :
5/32X14 in / AC	PE4792	Conforms	Horizontal :	Overhead :		Vertical :
3/16X14 in / ac	PE4871	Conforms	Horizontal :	Overhead :		Vertical :
3/16X14 in / DCEP	PE4872	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 / CD72270	0.05	1.14	0.01	0.01	0.42				2.33																
5/32X14 in / DCEP / CD81055																									
5/32X14 in / DCEP / CD81056																									
3/16X14 in / DCEP / CD81057																									
3/16X14 in / DCEP / CD81058																									
5/32X14 in / DCEP / PE4780	0.04	1.24	0.01	0.01	0.51				2.27																
5/32X14 in / AC / PE4792	0.05	1.20	0.01	0.01	0.51				2.30																
3/16X14 in / ac / PE4871	0.04	1.09	0.01	0.01	0.54				2.12																
3/16X14 in / DCEP / PE4872	0.03	1.11	0.01	0.01	0.56				2.11																

5/32X14 in / CD72270	Total H2O Method : Train - As Received	Total Coating Moisture : 0.015
5/32X14 in / CD81055	Total H2O Method : Train - As Received	Total Coating Moisture : 0.056
5/32X14 in / CD81056	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.22
3/16X14 in / CD81057	Total H2O Method : Train - As Received	Total Coating Moisture : 0.01
3/16X14 in / CD81058	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.375
5/32X14 in / PE4780	Total H2O Method : Train - As Received	Total Coating Moisture : 0.056

5/32X14 in / PE4792	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.22
3/16X14 in / PE4871	Total H2O Method : Train - As Received	Total Coating Moisture : 0.01
3/16X14 in / PE4872	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.375
Diffusible Hydrogen Collected per AWS A4.3		
3.3 ml/100g of weld metal for 5/32X14 in diameter 41% relative humidity		
3.2 ml/100g of weld metal for 5/32X14 in diameter 40% relative humidity		
2.8 ml/100g of weld metal for 3/16X14 in diameter 21% relative humidity		
2.7 ml/100g of weld metal for 3/16X14 in diameter 21% 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.