



Certificate of Conformance to Requirements for Welding Electrode

Product Type: HOBART 418
Classification: E7018, E7018-1 H4R
Specifications: AWS A5.1/A5.1M; ASME SFA 5.1
Diameter Tested: 5/32" - 1/4"
Date Tested: 6/14/2023
Date Generated: 6/22/2023

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	AC	200	24-26	225 (107)	300 (149)
5/32X14 in	DCEP	185	24-26	225 (107)	300 (149)
3/16X14 in	AC	240	27	225 (107)	300 (149)
3/16X14 in	DCEP	235	27	225 (107)	300 (149)
1/4X18 in	DCEP	340	28-29	300 (149)	300 (149)
1/4X18 in	AC	350	28-29	225 (107)	300 (149)

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	PE5737	As Welded	76,000 (523)	60,000 (415)	31
5/32X14 in / DCEP	PE5744	As Welded	74,000 (507)	60,000 (416)	28
1/4X18 in / DCEP	PE5984	As Welded	75,000 (515)	60,000 (416)	30
1/4X18 in / AC	PE6413	As Welded	81,000 (560)	67,000 (463)	24
3/16X14 in / AC	PE5763	As Welded	75,000 (520)	60,000 (412)	29
3/16X14 in / DCEP	PE5780	As Welded	72,000 (496)	59,000 (408)	31

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	PE5737	As Welded	-50 F (-46 C)	71,75,48 (96,102,65)	65 (88)	Charpy-V-Notch
5/32X14 in / DCEP	PE5744	As Welded	-50 F (-46 C)	90,100,94 (122,136,127)	95 (128)	Charpy-V-Notch
3/16X14 in / AC	PE5763	As Welded	-50 F (-46 C)	61,81,53 (83,110,72)	65 (88)	Charpy-V-Notch
3/16X14 in / DCEP	PE5780	As Welded	-50 F (-46 C)	192,242,222 (260,328,301)	219 (296)	Charpy-V-Notch
1/4X18 in / DCEP	PE5984	As Welded	-50 F (-46 C)	62,55,64 (84,75,87)	60 (82)	Charpy-V-Notch
1/4X18 in / AC	PE6330	As Welded	-50 F (-46 C)	34,31,47 (46,42,64)	37 (51)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / AC	PE5737	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / DCEP	PE5744	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
1/4X18 in / DCEP	PE5984	Conforms	Horizontal :	Overhead :	Vertical :	
1/4X18 in / AC	PE6330	Conforms	Horizontal :	Overhead :	Vertical :	
3/16X14 in / AC	PE5763	Conforms	Horizontal :	Overhead :	Vertical :	
3/16X14 in / DCEP	PE5780	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 / AC / PE5737	0.04	0.99	0.010	0.009	0.47		0.04	< .01	0.03	0.01															
5/32X14 in / DCEP / PE5744	0.03	1.04	0.011	0.009	0.54		0.04	< .01	0.03	0.01															
1/4X18 in / DCEP / PE5984	0.04	1.30	0.010	0.009	0.50		0.06	< .01	0.06	0.01															
1/4X18 in / AC / PE6330	0.06	1.26	0.010	0.010	0.43		0.07	< .01	0.06	0.01															

5/32X14 in / PE5737	Total H2O Method : Train - As Received	Total Coating Moisture : 0.058
5/32X14 in / PE5744	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.303
1/4X18 in / PE5984	Total H2O Method : Train - As Received	Total Coating Moisture : 0.058
1/4X18 in / PE6330	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.253

Diffusible Hydrogen Collected per AWS A4.3

2.8 ml/100g of weld metal for 1/4X18 in diameter 28% relative humidity

3.0 ml/100g of weld metal for 1/4X18 in diameter 28% relative humidity
2.3 ml/100g of weld metal for 5/32X14 in diameter 18% relative humidity
2.2 ml/100g of weld metal for 5/32X14 in diameter 18% relative humidity
2.6 ml/100g of weld metal for 3/16X14 in diameter 19% relative humidity
2.6 ml/100g of weld metal for 3/16X14 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.