



## 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:** 9/22/2025  
**Date Generated:** 10/13/2025

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)
3/16X14 in	DCEP	240	27	225 (107)	300 (149)
3/16X14 in	AC	220	27	225 (107)	300 (149)
5/32X14 in	DCEP	185	24-26	300 (149)	300 (149)
1/4X18 in	AC	350	28-29	225 (107)	300 (149)
1/4X18 in	DCEP	350	28-29	225 (107)	300 (149)
5/32X14 in	AC	195	24-26	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"
3/16X14 in / DCEP	PE9520	As Welded	74,000 ( 511 )	61,000 ( 418 )	31
3/16X14 in / AC	PE9836	As Welded	73,000 ( 504 )	59,000 ( 405 )	33
5/32X14 in / DCEP	PF0138	As Welded	76,000 ( 523 )	60,000 ( 412 )	30
1/4X18 in / AC	PF0220	As Welded	74,000 ( 512 )	61,000 ( 421 )	32
1/4X18 in / DCEP	PF0251	As Welded	73,000 ( 503 )	58,000 ( 401 )	32
5/32X14 in / AC	PF1178	As Welded	75,000 ( 520 )	60,000 ( 414 )	29

### Mechanical Properties - Impact

Size / Polarity	Ref. No.	Testing Conditions	Test Temp. F(C)	Individuals ft.lb.(J)	Average ft.lb.(J)	Type
3/16X14 in / DCEP	PE9520	As Welded	-50 F (-46 C)	295,296,298 (400,401,404)	296 ( 402 )	Charpy-V-Notch
3/16X14 in / AC	PE9836	As Welded	-50 F (-46 C)	293,284,261 (397,385,354)	279 ( 379 )	Charpy-V-Notch
5/32X14 in / DCEP	PF0138	As Welded	-50 F (-46 C)	180,155,66 (244,210,89)	134 ( 181 )	Charpy-V-Notch
1/4X18 in / AC	PF0220	As Welded	-50 F (-46 C)	93,105,123 (126,142,167)	107 ( 145 )	Charpy-V-Notch
1/4X18 in / DCEP	PF0251	As Welded	-50 F (-46 C)	268,267,259 (363,362,351)	265 ( 359 )	Charpy-V-Notch
5/32X14 in / AC	PF1178	As Welded	-50 F (-46 C)	95,74,70 (129,100,95)	80 ( 108 )	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
3/16X14 in / DCEP	PE9520	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
3/16X14 in / AC	PE9836	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / DCEP	PF0138	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / AC	PF0220	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / DCEP	PF0251	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / AC	PF1178	Conforms	Horizontal :	Conforms	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 / CF12211	0.04	0.82	0.010	0.010	0.45		0.07	< .01	0.06	0.01															
1/4X18 in / AC / PF0220	0.05	1.22	0.010	0.009	0.46		0.04	< .01	0.05	0.01															
1/4X18 in / DCEP / PF0251	0.04	1.21	0.011	0.012	0.50		0.05	< .01	0.05	0.01															
5/32X14 in / AC / PF1178	0.05	0.88	0.009	0.016	0.45		0.04	< .01	0.08	0.01															

5/32X14 in / CF12211	Total H2O Method : Train - As Received	Total Coating Moisture : 0.081
1/4X18 in / PF0220	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.07
1/4X18 in / PF0251	Total H2O Method : Train - As Received	Total Coating Moisture : 0.077
5/32X14 in / PF1178	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.344

Size / Polarity	Ref. No.	Diffusible Hydrogen Collected per AWS A4.3
3/16X14 in / AC	HB8174	2 ml/100g of weld metal for 3/16X14 in diameter 16% relative humidity
3/16X14 in / AC	HB8175	2 ml/100g of weld metal for 3/16X14 in diameter 16% relative humidity
5/32X14 in / AC	HB8305	3 ml/100g of weld metal for 5/32X14 in diameter 13% relative humidity
5/32X14 in / AC	HB8306	2 ml/100g of weld metal for 5/32X14 in diameter 17% relative humidity
1/4X18 in / AC	HB8308	3 ml/100g of weld metal for 1/4X18 in diameter 12% relative humidity
1/4X18 in / AC	HB8309	3 ml/100g of weld metal for 1/4X18 in diameter 17% relative humidity

*James A. Owens*

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.