



## Certificate of Conformance to Requirements for Welding Electrode

**Product Type:** Hobart 7018 XLM  
**Classification:** E7018-1 H4R  
**Specifications:** AWS A5.1/A5.1M; ASME SFA 5.1  
**Diameter Tested:** 5/32"-3/16"  
**Date Tested:** 8/25/2023  
**Date Generated:** 8/29/2023

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	25	225 (107)	300 (149)
3/16X14 in	DCEP	250	29	225 (107)	300 (149)
5/32X14 in	AC	200	25	225 (107)	300 (149)
3/16X14 in	AC	250	29	225 (107)	325 (163)

### 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	PE6681	As Welded	77,000 ( 533 )	66,000 ( 455 )	<b>29</b>
3/16X14 in / AC	PE6699	As Welded	82,000 ( 564 )	69,000 ( 476 )	<b>28</b>
5/32X14 in / DCEP	PE6674	As Welded	76,000 ( 523 )	62,000 ( 431 )	<b>28</b>
5/32X14 in / AC	PE6698	As Welded	77,000 ( 528 )	64,000 ( 443 )	<b>31</b>

### 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	PE6674	As Welded	-50 F (-46 C)	164,297,286 (222,403,388)	249 ( 338 )	Charpy-V-Notch
3/16X14 in / DCEP	PE6681	As Welded	-50 F (-46 C)	34,127,116 (46,172,157)	92 ( 125 )	Charpy-V-Notch
5/32X14 in / AC	PE6698	As Welded	-50 F (-46 C)	116,112,118 (157,152,160)	115 ( 156 )	Charpy-V-Notch
3/16X14 in / AC	pe6699	As Welded	-50 F (-46 C)	83,79,91 (113,107,123)	84 ( 114 )	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / DCEP	PE6674	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
3/16X14 in / DCEP	PE6681	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / AC	PE6698	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
3/16X14 in / AC	PE6699	Conforms	Horizontal :	Overhead :	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 / PE6674	0.05	0.98	0.010	0.009	0.40		0.03	< .01	0.02	0.01															
3/16X14 in / DCEP / PE6681	0.04	1.07	0.010	0.006	0.35		0.07	0.01	0.07	0.10															
5/32X14 in / AC / PE6698	0.06	0.97	0.010	0.009	0.44		0.03	< .01	0.02	0.01															
3/16X14 in / AC / PE6699	0.06	1.05	0.010	0.007	0.45		0.07	0.01	0.06	0.09															

5/32X14 in / PE6674	Total H2O Method : Train - As Received	Total Coating Moisture : 0.095
3/16X14 in / PE6681	Total H2O Method : Train - As Received	Total Coating Moisture : 0.175
5/32X14 in / PE6698	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.3
3/16X14 in / PE6699	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.137

### Diffusible Hydrogen Collected per AWS A4.3

3.7 ml/100g of weld metal for 3/16X14 in diameter 44% relative humidity
4.0 ml/100g of weld metal for 3/16X14 in diameter 48% relative humidity
3.4 ml/100g of weld metal for 5/32X14 in diameter 46% relative humidity
2.9 ml/100g of weld metal for 5/32X14 in diameter 41% relative humidity

*James A. Ormrod*

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.