



## Certificate of Conformance to Requirements for Welding Electrode

**Product Type:** HOBALLOY 9018B3  
**Classification:** E9018-B3 H4R  
**Specifications:** AWS A5.5/A5.5M; ASME SFA 5.5:  
**Diameter Tested:** 5/32"-1/4"  
**Date Tested:** 1/24/2023  
**Date Generated:** 3/20/2023

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	190	26 - 24	325 (163)	375 (191)
1/4X18 in	DCEP	340	27 - 26	()	()
1/4X18 in	ac	340	27 - 26	325 (163)	375 (191)
5/32X14 in	AC	195	26 - 24	()	()
3/16X14 in	DCEP	230	26	325 (163)	375 (191)
3/16X14 in	AC	250	26	325 (163)	375 (191)

### Mechanical Properties - Tensile

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength psi(MPa)	Yield Strength psi(MPa)	Elong. % in 2"
1/4X18 in / DCEP	PE4899	SR 1 Hr @ 1275F	105,000 ( 724 )	89,000 ( 616 )	<b>22</b>
1/4X18 in / ac	PE4900	SR 1 Hr @ 1275F	113,000 ( 779 )	98,000 ( 678 )	<b>21</b>
5/32X14 in / DCEP	PE4678	SR 1 Hr @ 1275F	110,000 ( 758 )	94,000 ( 649 )	<b>20</b>
5/32X14 in / AC	PE4941	SR 1 Hr @ 1275F	111,000 ( 765 )	92,000 ( 635 )	<b>18</b>
3/16X14 in / DCEP	PE5554	SR 1 Hr @ 1275F	105,000 ( 724 )	90,000 ( 621 )	<b>22</b>
3/16X14 in / AC	PE5821	SR 1 Hr @ 1275F	108,000 ( 745 )	93,000 ( 641 )	<b>21</b>

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
1/4X18 in / DCEP	PE4899	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / ac	PE4900	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / DCEP	PE4678	Conforms	Horizontal :	Conforms	Overhead :	Vertical : Conforms
5/32X14 in / AC	PE4941	Conforms	Horizontal :	Conforms	Overhead :	Vertical : Conforms
3/16X14 in / DCEP	PE5554	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
3/16X14 in / AC	PE5821	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 / PE4678	0.09	0.67	0.01	0.01	0.53		2.35			1.18															
1/4X18 in / DCEP / PE4899	0.07	0.80	0.01	0.02	0.62		2.24			1.08															
1/4X18 in / ac / PE4900	0.10	0.78	0.01	0.01	0.61		2.22			1.02															
5/32X14 in / AC / PE4941	0.08	0.65	0.01	0.01	0.55		2.33			1.13															

5/32X14 in / PE4678	Total H2O Method : Train - As Received	Total Coating Moisture : 0.145
1/4X18 in / PE4899	Total H2O Method : Train - As Received	Total Coating Moisture : 0.058
1/4X18 in / PE4900	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.187
5/32X14 in / PE4941	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.19

### Diffusible Hydrogen Collected per AWS A4.3

2.3 ml/100g of weld metal for 5/32X14 in diameter 28% relative humidity
2.1 ml/100g of weld metal for 5/32X14 in diameter 29% relative humidity
3.3 ml/100g of weld metal for 3/16X14 in diameter 20% relative humidity
3.5 ml/100g of weld metal for 3/16X14 in diameter 21% relative humidity
2.8 ml/100g of weld metal for 1/4X18 in diameter 39% relative humidity
2.4 ml/100g of weld metal for 1/4X18 in diameter 39% 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.