



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:
Date Tested: 1/14/2022
Date Generated: 1/20/2022

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	330	27 - 26	325 (163)	375 (191)
5/32X14 in	AC	195	26 - 24	325 (163)	375 (191)
3/16X14 in	DCEP	230	26	325 (163)	375 (191)
1/4X18 in	AC	340	27 - 26	325 (163)	375 (191)
3/16X14 in	AC	240	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"
3/16X14 in / DCEP	PE3407	SR 1 Hr @ 1275F	108,000 (745)	92,000 (637)	20
3/16X14 in / AC	PE3414	SR 1 Hr @ 1275F	124,000 (855)	109,000 (752)	17
1/4X18 in / DCEP	PE3399	SR 1 Hr @ 1275F	112,000 (772)	97,000 (670)	20
1/4X18 in / AC	PE3408	SR 1 Hr @ 1275F	116,000 (800)	101,000 (696)	19
5/32X14 in / DCEP	PE3397	SR 1 Hr @ 1275F	112,000 (772)	98,000 (673)	19
5/32X14 in / AC	PE3400	SR 1 Hr @ 1275F	120,000 (827)	105,000 (724)	19

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
3/16X14 in / DCEP	PE3407	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
3/16X14 in / AC	PE3414	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / DCEP	PE3399	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / AC	PE3408	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / DCEP	PE3397	Conforms	Horizontal :	Conforms	Overhead :	Vertical : Conforms
5/32X14 in / AC	PE3400	Conforms	Horizontal :	Conforms	Overhead :	Vertical : Conforms

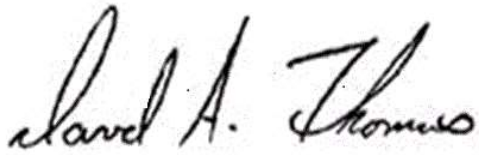
Chemical Analysis

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 / PE3397	0.07	0.68	0.01	0.01	0.57		2.48		1.09																
1/4X18 in / DCEP / PE3399	0.09	0.82	0.01	0.01	0.62		2.17		0.97																
5/32X14 in / AC / PE3400	0.11	0.73	0.01	0.01	0.68		2.48		1.18																
1/4X18 in / AC / PE3408	0.11	0.83	0.01	0.01	0.62		2.36		1.05																

5/32X14 in / PE3397	Total H2O Method : Train - As Received	Total Coating Moisture : 0.1
1/4X18 in / PE3399	Total H2O Method : Train - As Received	Total Coating Moisture : 0.082
5/32X14 in / PE3400	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.3
1/4X18 in / PE3408	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.243

Diffusible Hydrogen Collected per AWS A4.3

2.7 ml/100g of weld metal for 1/4X18 in diameter % relative humidity
2.6 ml/100g of weld metal for 3/16X14 in diameter 21% relative humidity
2.9 ml/100g of weld metal for 5/32X14 in diameter % relative humidity

A handwritten signature in black ink that reads "David A. Thomas". The signature is written in a cursive style with a large initial 'D' and 'T'.

Dave Thomas, Quality Assurance Rep.

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.