



Certificate of Conformance to Requirements for Welding Electrode

Product Type: HOBALLOY 7018A1
Classification: E7018-A1 H4R
Specifications: AWS A5.5/A5.5M; ASME SFA 5.5
Diameter Tested: 1/8" 5/32"
Date Tested: 11/22/2022
Date Generated: 3/1/2023

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)
1/8X14 in	DCEP	140	26 - 23 1/2	225 (107)	225 (107)
5/32X14 in	AC	200	26 - 24	225 (107)	225 (107)
5/32X14 in	DCEP	185	26 - 24	225 (107)	225 (107)
1/8X14 in	AC	150	26 - 23 1/2	225 (107)	225 (107)

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	PE5646	SR 1 Hr @ 1050F	86,000 (590)	74,000 (510)	27
5/32X14 in / DCEP	PE5672	As Welded	82,000 (565)	70,000 (482)	29
1/8X14 in / DCEP	PE4686	SR 1 Hr @ 1150F	86,000 (596)	72,000 (496)	27
1/8X14 in / AC	PE5688	SR 1 Hr @ 1150F	87,000 (599)	74,000 (512)	25

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test		
5/32X14 in / AC	PE5646	Conforms	Horizontal :	Overhead :	Vertical :
5/32X14 in / DCEP	PE5672	Conforms	Horizontal :	Overhead :	Vertical :
1/8X14 in / DCEP	PE4686	Conforms	Horizontal :	Overhead :	Vertical :
1/8X14 in / AC	PE5688	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
1/8X14 in / DCEP / PE4686	0.03	0.84	0.01	0.01	0.47					0.59															
5/32X14 in / AC / PE5646	0.02	0.82	0.01	0.01	0.45					0.51															
5/32X14 in / DCEP / PE5672	0.02	0.84	0.01	0.01	0.46					0.51															
1/8X14 in / AC / PE5688	0.02	0.83	0.01	0.01	0.52					0.54															

1/8X14 in / PE4686	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.183
5/32X14 in / PE5646	Total H2O Method : Train - As Received	Total Coating Moisture : 0.119
5/32X14 in / PE5672	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.396
1/8X14 in / PE5688	Total H2O Method : Train - As Received	Total Coating Moisture : 0.098

Diffusible Hydrogen Collected per AWS A4.3

2.0 ml/100g of weld metal for 5/32X14 in diameter 29% relative humidity
2.6 ml/100g of weld metal for 5/32X14 in diameter 28% relative humidity
2.1 ml/100g of weld metal for 1/8X14 in diameter 34% relative humidity
1.8 ml/100g of weld metal for 1/8X14 in diameter 29% 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.