



Certificate of Conformance to Requirements for Welding Electrode

Product Type: HOBALLOY 10018D2
Classification: E10018-D2 H4R
Specifications: AWS A5.5/A5.5M; ASME SFA 5.5
Diameter Tested:
Date Tested: 1/26/2021
Date Generated: 2/4/2021

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	AC	200	26 - 24	225°F ()	225 (107)
5/32X14 in	DCEP	175	26 - 24	225°F ()	225 (107)
3/16X14 in	AC	230	25-26	225°F ()	225 (107)
3/16X14 in	DCEP	220	25-26	225°F ()	225 (107)
1/4X18 in	AC	330	27 - 26	225°F ()	225 (107)
1/4X18 in	DCEP	320	27 - 26	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	PE1555	SR 1 Hr @ 1150F	103,000 (710)	94,000 (645)	24
5/32X14 in / DCEP	PE1556	SR 1 Hr @ 1150F	101,000 (696)	90,000 (624)	23
1/4X18 in / AC	PE1559	SR 1 Hr @ 1150F	105,000 (724)	96,000 (661)	24
1/4X18 in / DCEP	PE1560	SR 1 Hr @ 1150F	104,000 (717)	93,000 (641)	26
3/16X14 in / AC	PE1557	SR 1 Hr @ 1150F	104,000 (717)	95,000 (654)	23
3/16X14 in / DCEP	PE1558	SR 1 Hr @ 1150F	101,000 (696)	907,000 (6,254)	24

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 / AC	PE1555	SR 1 Hr @ 1150F	-60 F (-51 C)	49,42,50 (66,57,68)	47 (64)	Charpy-V-Notch
5/32X14 in / DCEP	PE1556	SR 1 Hr @ 1150F	-60 F (-51 C)	53,50,71 (72,68,96)	58 (79)	Charpy-V-Notch
3/16X14 in / AC	PE1557	SR 1 Hr @ 1150F	-60 F (-51 C)	22,19,38 (30,26,52)	26 (36)	Charpy-V-Notch
3/16X14 in / DCEP	PE1558	SR 1 Hr @ 1150F	-60 F (-51 C)	38,39,47 (52,53,64)	41 (56)	Charpy-V-Notch
1/4X18 in / AC	PE1559	SR 1 Hr @ 1150F	-60 F (-51 C)	34,38,35 (46,52,47)	36 (48)	Charpy-V-Notch
1/4X18 in / DCEP	PE1560	SR 1 Hr @ 1150F	-60 F (-51 C)	38,35,31 (52,47,42)	35 (47)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph		Fillet Weld Test			
5/32X14 in / AC	PE1555	Conforms		Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / DCEP	PE1556	Conforms		Horizontal :	Overhead :	Vertical :	Conforms
1/4X18 in / AC	PE1559	Conforms		Horizontal :	Overhead :	Vertical :	
1/4X18 in / DCEP	PE1560	Conforms		Horizontal :	Overhead :	Vertical :	
3/16X14 in / AC	PE1557	Conforms		Horizontal :	Overhead :	Vertical :	
3/16X14 in / DCEP	PE1558	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
5/32X14 in / DCEP / CD63442	0.06	2.00	0.01	0.01	0.16				0.42	0.42															
1/4X18 in / DCEP / CD69355	0.05	1.98	0.01	0.01	0.21				0.39	0.38															
1/4X18 in / AC / CD70715	0.08	1.94	0.01	0.01	0.22				0.40	0.39															
5/32X14 in / AC / PE1555	0.05	1.86	0.01	0.01	0.19				0.40	0.41															

5/32X14 in / CD63442	Total H2O Method : Train - As Received	Total Coating Moisture : 0.07
1/4X18 in / CD69355	Total H2O Method : Train - As Received	Total Coating Moisture : 0.023
1/4X18 in / CD70715	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.095
5/32X14 in / PE1555	Total H2O Method : Train - 9 Hour	Total Coating Moisture : 0.17

Diffusible Hydrogen Collected per AWS A4.3

4.0 ml/100g of weld metal for 1/4X18 in diameter 23% relative humidity

2.9 ml/100g of weld metal for 3/16X14 in diameter 23% relative humidity

2.9 ml/100g of weld metal for 5/32X14 in diameter 26% relative humidity



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.