



**Certificate of Conformance  
to Requirements for Welding Electrode**

Hobart

Product Type: Hoballoy 10018M  
 Classification: E10018M H4R  
 Specifications: AWS A5.5/A5.5M:2014  
 Diameter Tested:  
 Date Tested: 12/13/2016  
 Date Generated: 12/14/2016

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 ISO9000, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

**Test Settings**

Amps	Volts	Size	Polarity	Preheat	Interpass	Travel Speed
140	24	1/8X14 in	DCEP	250 F (121 C)	250 F (121 C)	+ - 1 in/min
185	24	5/32X14 in	DCEP	250 F (121 C)	250 F (121 C)	+ - 1 in/min

**Mechanical Properties - Tensile**

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong.% in 2"
5/32X14 in / DCEP	pd2676	Aged 48 Hrs 220F	105,000 psi ( 724 Mpa)	94,000 psi ( 646 Mpa)	25
1/8X14 in / DCEP	PD2456	Aged 48 Hrs 220F	103,000 psi ( 710 Mpa)	89,000 psi ( 612 Mpa)	30

**Mechanical Properties - Impact**

Size / Polarity	Ref. No.	Testing Conditions	Test Temp.	Individuals	Average	Type
1/8X14 in / DCEP	PD2456	As Welded	-60 F (-51 C)	58,59,56 ft.lb	58 ft.lb ( 78 J)	Charpy-V-Notch
5/32X14 in / DCEP	PD2522	As Welded	-60 F (-51 C)	57,60,52 ft.lb	56 ft.lb ( 76 J)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
5/32X14 in / DCEP	PD2522	Conforms	Horizontal :	Overhead :	Conforms	Vertical : Conforms
1/8X14 in / DCEP	PD2456	Conforms	Horizontal :	Overhead :	Conforms	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
1/8X14 in / DCEP / PD2456	0.06	1.16	0.017	0.012	0.22		0.07	0.01	1.76	0.38													
5/32X14 in / DCEP / PD2522	0.07	1.17	0.013	0.008	0.13		0.04	0.00	1.58	0.34													

Size : 1/8X14 in	Total H2O Method : RC412 - As Received	Total Coating Moisture : 0.14	Ref. No. : PD2456
Size : 5/32X14 in	Total H2O Method : RC412 - As Received	Total Coating Moisture : 0.08	Ref. No. : PD2522

**Diffusible Hydrogen Collected per AWS A4.3 - ml/100 g weld metal**

	2.4	ml/100g	For	1/8X14 in	dia
n/a	2.7	ml/100g	For	5/32X14 in	dia

*Dave A. Thomas*

Dave Thomas , Quality Assurance Rep.

The information 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. Hobart Brothers produces welding consumables under continuing quality assurance programs audited and approved by the American Bureau of Shipping ("ABS").