

Product Type: HOBART 447A  
 Classification: E6013  
 Specifications: AWS A5.1/A5.1M:2004  
 Diameter Tested:  
 Date Tested: 03/06/07  
 Date Generated: 1/25/2008

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
160	25	5/32X14 in	AC	250 F (121 C)	300 F (149 C)	+ 1 in/min
160	25	5/32X14 in	DCEN	250 F (121 C)	300 F (149 C)	+ 1 in/min
220	21	3/16X14 in	DCEN	250 F (121 C)	300 F (149 C)	+ 1 in/min
220	21	3/16X14 in	AC	250 F (121 C)	300 F (149 C)	+ 1 in/min

### Mechanical Properties - Tensile

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong.% in 2"
3/16X14 in / DCEN	PA4877	Aged 48 Hrs 220F	72,000 psi ( 494 Mpa)	63,000 psi ( 432 Mpa)	26
3/16X14 in / AC	PA4878	Aged 48 Hrs 220F	72,000 psi ( 499 Mpa)	59,000 psi ( 405 Mpa)	28
5/32X14 in / AC	PA4813	Aged 48 Hrs 220F	76,000 psi ( 525 Mpa)	64,000 psi ( 444 Mpa)	24
5/32X14 in / DCEN	PA4818	Aged 48 Hrs 220F	75,000 psi ( 519 Mpa)	65,000 psi ( 445 Mpa)	26

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
3/16X14 in / DCEN	PA4877	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
3/16X14 in / AC	PA4878	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / AC	PA4813	Conforms	Horizontal :	Overhead :	Vertical :	Conforms
5/32X14 in / DCEN	PA4818	Conforms	Horizontal :	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
5/32X14 in / DCEN / PA4818	0.08	0.30			0.21		0.06	0.01	0.10	0.01													
3/16X14 in / DCEN / PA4877	0.08	0.35			0.24		0.06	0.01	0.09	0.03													



Steve Knostman , Quality Engineer



Guo Hao , R & D Engineer

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").