

Product Type: HOBART24
 Classification: E7024, E7024-1
 Specifications: AWS A5.1/A5.1M:2004
 Diameter Tested:
 Date Tested: 06/26/07
 Date Generated: 3/4/2008

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 dates 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 9000, ANSI/AWS A5.01, and other specification and Military requirements, as applicable.

Test Settings

Amps	Volts	Size	Polarity	Preheat	Interpass	Travel Speed
250	34-36	3/16X18in	AC	225F(107C)	300F(149C)	+1 in/min
240	34-36	3/16X18in	DCEN	300F(149C)	300F(149C)	+1 in/min
340	36-38	1/4X18in	AC	225F(107C)	300F(149C)	+1 in/min
350	36-38	1/4X18in	DCEN	225F(107C)	325F(163C)	+1 in/min
210	28-29	5/32X14in	AC	225F(107C)	350F(177C)	+1 in/min
200	28-29	5/32X14in	DCEN	225F(107C)	350F(177C)	+1 in/min

Mechanical Properties-Tensile

Size/Polarity	Ref.No.	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong. % in 2"
3/16X18in/AC	PA4750	Aged 48 Hrs 220F	83,000psi(575Mpa)	75,000psi(516Mpa)	25
3/16X18in/DCEN	PA4784	Aged 48 Hrs 220F	83,000psi(574Mpa)	72,000psi(494Mpa)	26
1/4X18in/AC	PA4857	Aged 48 Hrs 220F	78,000psi(536Mpa)	69,000psi(478Mpa)	25
1/4X18in/DCEN	PA4962	Aged 48 Hrs 220F	77,000psi(534Mpa)	70,000psi(484Mpa)	26
5/32X14in/AC	PA5668	Aged 48 Hrs 220F	76,000psi(525Mpa)	70,000psi(483Mpa)	25
5/32X14in/DCEN	PA5671	Aged 48 Hrs 220F	76,000psi(525Mpa)	68,000psi(470Mpa)	24

Mechanical Properties-Impact

Size/Polarity	Ref.No.	Testing Conditions	Test Temp.	Individuals	Average	Type
3/16X18in/AC	PA4750	As Welded	0F(-18C)	47,46,42ft.lb	45ft.lb(61J)	Charpy-V-Notch
3/16X18in/DCEN	PA4784	As Welded	0F(-18C)	42,50,45ft.lb	46ft.lb(62J)	Charpy-V-Notch
1/4X18in/AC	PA4857	As Welded	0F(-18C)	54,53,50ft.lb	52ft.lb(71J)	Charpy-V-Notch
1/4X18in/DCEN	PA4962	As Welded	0F(-18C)	63,65,62ft.lb	63ft.lb(86J)	Charpy-V-Notch
5/32X14in/AC	PA5668	As Welded	0F(-18C)	51,52,60ft.lb	54ft.lb(74J)	Charpy-V-Notch
5/32X14in/DCEN	PA5671	As Welded	0F(-18C)	61,44,53ft.lb	53ft.lb(71J)	Charpy-V-Notch

Size/Polarity	Ref.No.	Radiograph	Fillet Weld Test			
3/16X18in/AC	PA4750	Conforms	Horizontal: Conforms	Overhead:	Vertical:	
3/16X18in/DCEN	PA4784	Conforms	Horizontal: Conforms	Overhead:	Vertical:	
1/4X18in/AC	PA4857	Conforms	Horizontal: Conforms	Overhead:	Vertical:	
1/4X18in/DCEN	PA4962	Conforms	Horizontal: Conforms	Overhead:	Vertical:	
5/32X14in/AC	PA5668	Conforms	Horizontal: Conforms	Overhead:	Vertical:	
5/32X14in/DCEN	PA5671	Conforms	Horizontal: Conforms	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
3/16X18in/DCEN/PA4784	0.06	0.88	0.007	0.014	0.45		0.06	0.02	0.09	0.03													
1/4X18in/DCEN/PA4962	0.05	0.63	0.010	0.009	0.34		0.05	0.01	0.08	0.02													
5/32X14in/DCEN/PA5671	0.06	0.77	0.011	0.010	0.43		0.03	0.02	0.04	0.02													



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").