



Certificate of Conformance to Requirements for Welding Electrode

Hobart

Product Type: Hobart 24
 Classification: E7024, E7024-1
 Specifications: AWS A5.1/A5.1M:2012
 Diameter Tested:
 Date Tested: 11/23/2016
 Date Generated: 12/1/2016

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
230	36	3/16X18 in	AC	300 F (149 C)	350 F (177 C)	+ - 1 in/min
230	36	3/16X18 in	DCEN	300 F (149 C)	350 F (177 C)	+ - 1 in/min
330	36	1/4X18 in	DCEN	300 F (149 C)	350 F (177 C)	+ - 1 in/min
200	28	5/32X14 in	AC	300 F (149 C)	350 F (177 C)	+ - 1 in/min
185	28	5/32X14 in	DCEN	300 F (149 C)	350 F (177 C)	+ - 1 in/min
300		1/4X18 in	AC	300F F (C)	350F F (C)	+ - 1 in/min

Mechanical Properties - Tensile

Size / Polarity	Ref. No.	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong.% in 2"
3/16X18 in / DCEN	pd0459	Aged 48 Hrs 220F	77,000 psi (530 Mpa)	67,000 psi (460 Mpa)	23
3/16X18 in / AC	pd0549	Aged 48 Hrs 220F	77,000 psi (529 Mpa)	68,000 psi (470 Mpa)	27
1/4X18 in / DCEN	pd0461	Aged 48 Hrs 220F	75,000 psi (518 Mpa)	68,000 psi (467 Mpa)	26
5/32X14 in / DCEN	pd0598	Aged 48 Hrs 220F	77,000 psi (528 Mpa)	65,000 psi (449 Mpa)	24
5/32X14 in / AC	PD0599	Aged 16 Hrs @ 482F	74,000 psi (508 Mpa)	66,000 psi (459 Mpa)	26
1/4X18 in / AC	PD2618	Aged 48 Hrs 220F	74,000 psi (507 Mpa)	66,000 psi (452 Mpa)	22

Mechanical Properties - Impact

Size / Polarity	Ref. No.	Testing Conditions	Test Temp.	Individuals	Average	Type
3/16X18 in / AC	PD0458	As Welded	0 F (-18 C)	45,52,45 ft.lb	47 ft.lb (64 J)	Charpy-V-Notch
3/16X18 in / DCEN	PD0459	As Welded	0 F (-18 C)	47,44,50 ft.lb	47 ft.lb (64 J)	Charpy-V-Notch
1/4X18 in / DCEN	PD0461	As Welded	0 F (-18 C)	42,46,36 ft.lb	41 ft.lb (56 J)	Charpy-V-Notch
5/32X14 in / AC	PD0597	As Welded	0 F (-18 C)	42,48,54 ft.lb	48 ft.lb (65 J)	Charpy-V-Notch
5/32X14 in / DCEN	PD0598	As Welded	0 F (-18 C)	52,47,49 ft.lb	49 ft.lb (67 J)	Charpy-V-Notch
1/4X18 in / AC	PD2618	As Welded	0 F (-18 C)	44,44,44 ft.lb	44 ft.lb (60 J)	Charpy-V-Notch

Size / Polarity	Ref. No.	Radiograph	Fillet Weld Test			
3/16X18 in / AC	PD0458	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
3/16X18 in / DCEN	PD0459	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / DCEN	PD0461	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / AC	PD0597	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
5/32X14 in / DCEN	PD0598	Conforms	Horizontal :	Conforms	Overhead :	Vertical :
1/4X18 in / AC	PD2618	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
3/16X18 in / DCEN / PD0459	0.06	0.75	0.008	0.018	0.43		0.04	0.02	0.06	0.01													
1/4X18 in / DCEN / PD0461	0.05	0.68	0.009	0.014	0.37		0.04	0.02	0.07	0.01													
5/32X14 in / DCEN / PD0598	0.05	0.79	0.008	0.012	0.43		0.03	0.02	0.03	0.01													

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").