

Product Type: METALLOY VANTAGENi1
 Classification: E80C-Ni1H4
 Specifications: AWSA5.28-2005;ASMESFA5.28
 Diameter Tested: .045"
 Date Tested: 6/16/08
 Date Generated: 6/17/2008

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/AWSA 5.01, and other specification and Military requirements, as applicable.

Test Settings

Shielding Medium	Amps/Polarity	Volts	WFS in/min(m/min)	ESOI in(mm)	Preheat F(C)	Interpass F(C)	Travel Speed in/min(cm/min)
SG-AO-5	300/DCEP	29	430(10.9)	.75(19)	300(149)	300(149)	10(25.4)

Mechanical Properties-Tensile

Shielding Medium	Ref.No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi(MPa)	Elong. %in2"
SG-AO-5	pa7230	Aged 48 Hrs 200F	89,000(614)	79,000(542)	26

Mechanical Properties-Impact

Shielding Medium	Ref.No.	Testing Conditions	Temp. F(C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
SG-AO-5	PA7131	As Welded	-50(-46)	70,63,57(95,85,77)	63(86)	Charpy-V-Notch

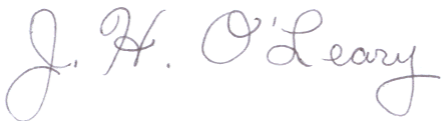
Ref.No.	Radiographic Inspection	Fillet Weld Test		
PA7131	Conforms	Horizontal:	Overhead:	Vertical:

Chemical Analysis

Shielding Medium/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
SG-AO-5/CA69769	0.03	1.15	0.007	0.010	0.47	0.05	0.03	<.01	0.87	0.01													

Diffusible Hydrogen Collected per AWSA 4.3

SG-AO-5	2.7ml/100g of weld metal for .045 in diameter
---------	---



Joe O'Leary, Manager, Quality Assurance



Melvin Seitz, Quality Manager

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").