

Product Type: TM-81N1
 Classification: E80T1-Ni1C
 Specifications: AWSA5.29-2005;ASMESFA5.29
 Diameter Tested: 3/32";1/16"
 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)	ESO in(mm)	Preheat F(C)	Interpass F(C)	Travel Speed in/min(cm/min)
SG-C100%CO2	425/DCEP	29	170(4.3)	1(25)	300(149)	325(163)	12(30.5)
SG-AC-25	425/DCEP	28	170(4.3)	1(25)	300(149)	300(149)	12(30.5)
SG-C100%CO2	275/DCEP	27	245(6.2)	3/4(19)	300(149)	300(149)	10(25.4)
SG-AC-25	275/DCEP	26	250(-5.6)	3/4(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-C100%CO2	PA7467	As Welded	87,000(600)	77,000(531)	25
SG-AC-25	PA7472	As Welded	92,000(634)	79,000(543)	24
SG-C100%CO2	pa7095	As Welded	87,000(601)	74,000(512)	25
SG-AC-25	pa7096	As Welded	95,000(654)	82,000(563)	24

Mechanical Properties-Impact

Shielding Medium	Ref.No.	Testing Conditions	Temp.F(C)	Individuals ft.lb.(J)	Avg.ft.lb.(J)	Type
SG-C100%CO2	PA7467	As Welded	-20(-29)	58,43,50(79,58,68)	50(68)	Charpy-V-Notch
SG-AC-25	PA7472	As Welded	-20(-29)	42,41,41(57,56,56)	41(56)	Charpy-V-Notch
SG-C100%CO2	PA7095	As Welded	-20(-29)	27,32,17(37,43,23)	25(34)	Charpy-V-Notch
SG-AC-25	PA7096	As Welded	-20(-29)	34,33,32(46,45,43)	33(45)	Charpy-V-Notch

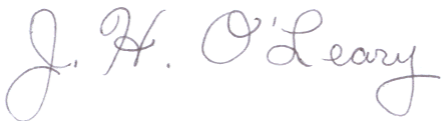
Ref.No.	Radiographic Inspection	Fillet Weld Test			
PA7467	Conforms	Horizontal:	Overhead:	Vertical:	Vertical:
PA7494	Conforms	Horizontal:	Overhead:	Vertical:	Vertical:
PA7095	Conforms	Horizontal: Conforms	Overhead:	Vertical:	Vertical:
PA7096	Conforms	Horizontal: Conforms	Overhead:	Vertical:	Vertical:

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-C100%CO2/CA69488	0.06	0.93	0.010	0.010	0.35	0.04	0.04	0.02	1.07	<.01	*	*	*	*	*	*	*	*	*	*	*	*	*
SG-AC-25/CA69490	0.07	1.20	0.010	0.008	0.53	0.04	0.04	0.02	1.03	<.01	*	*	*	*	*	*	*	*	*	*	*	*	*
SG-C100%CO2/CA72085	0.05	1.19	0.009	0.009	0.47	0.04	0.04	0.02	0.98	<.01	*	*	*	*	*	*	*	*	*	*	*	*	*
SG-AC-25/CA72094	0.05	1.37	0.009	0.009	0.60	0.04	0.05	0.02	1.05	<.01	*	*	*	*	*	*	*	*	*	*	*	*	*

Diffusible Hydrogen Collected per AWSA4.3

SG-AC-25	7.0ml/100g of weld metal for 3/32 inch diameter
SG-C100%CO2	5.0ml/100g of weld metal for 3/32 inch diameter
SG-C100%CO2	4.9ml/100g of weld metal for 1/16 inch diameter
SG-AC-25	7.8ml/100g of weld metal for 1/16 inch 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").