



**Certificate of Conformance
to Requirements for Welding Electrode**

Product Type: TM 811N1 .045 33 SP
 Classification: E81T1-Ni1CJ H4 ;E81T1-Ni1MJ H4
 Specifications: AWS A5.29-2005; ASME SFA5.29
 Diameter Tested: 1/16"
 Date Tested: 3/17/2016
 Date Generated: 3/21/2016

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 ISO 9001, ANSI/AWS A5.01, and other specification and Military requirements, as applicable. This document supplies actual test results of non-specific inspection in conformance with the requirements of EN 10204, type 2.2 certification.

THE STEEL USED IN THIS LOT OF MATERIAL WAS MELTED AND MANUFACTURED IN THE U.S.A.

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-C 100% CO2	275 / DCEP	27	230 (5.8)	3/4 (19)	300(149)	300(149)	10 (25.4)
SG-AC-25	275 / DCEP	27	230 (5.8)	3/4 (19)	300(149)	300(149)	8 (20.3)

Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
SG-C 100% CO2	PD0776	As Welded	81,000 (561)	74,000 (510)	27
SG-AC-25	PD0922	Aged 48 Hrs 220F	99,000 (683)	88,000 (604)	22

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
SG-C 100% CO2	PD0776	As Welded	-40 (-40)	106,100,100 (144,136,136)	102 (138)	Charpy-V-Notch
SG-AC-25	PD0873	As Welded	-40 (-40)	37,58,41 (50,79,56)	45 (61)	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test			
PD0776	Conforms	Horizontal :	Overhead :	Conforms	Vertical : Conforms
PD0873	Conforms	Horizontal :	Overhead :	Conforms	Vertical : Conforms

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-C 100% CO2 / CD09934	0.05	1.24	0.009	0.008	0.26	0.05	0.02	0.02	1.06	< .01													
SG-AC-25 / CD11603	0.03	1.46	0.013	0.011	0.33	0.01	0.03	0.02	0.97	< .01	< .01												

Diffusible Hydrogen Collected per AWS A4.3

SG-C 100% CO2	2.8 ml/100g of weld metal for 1/16 in diameter 53% relative humidity
SG-AC-25	2.0 ml/100g of weld metal for 1/16 in diameter 52% relative humidity

Dave A. Thomas

Dave Thomas, Quality Assurance Rep.

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").