Certificate of Conformance to Requirements for Welding Electrode

Hobart

Customer:		Product Type:	SDX S2Ni1 - ENi1 5/32 55 CL
Customer P.O. No.:		Classification:	ENi1
Order No.:		Specifications:	AWS A5.23
Stock Number:	821401025H	Diameter Tested:	5/32"
Lbs. Shipped:		Date Tested:	3/30/2015
Date Generated:	12/1/2016	Diameter Shipped:	5/32 in
Lot Nos. Shipped:			

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.

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)
SWX 150 (F7A8-ENi1-Ni1)	525 / DCEP	29	44 (1.1)	1.25 (32)	300(149)	300(149)	16 (40.6)
SWX 150 (F7P8-ENi1-Ni1)	525 / DCEP	29	44 (1.1)	1.25 (32)	300(149)	300(149)	16 (40.6)
SWX 110 (F8A4-ENi1-Ni1 H8)	475-575 / DCEP	27-30	44 (1.1)	1.25 (32)	275-325()	275-325()	15 (38.1)
HN-590 (F8P4-ENi1-Ni1)	575 / DCEP	30	45 (1.1)	1.25 (32)	325(163)	325(163)	16 (40.6)
HN-590 (F8A4-ENi1-Ni1)	575 / DCEP	30	45 (1.1)	1.25 (32)	325(163)	325(163)	16 (40.6)

Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
SWX 150 (F7A8-ENi1-Ni1)	PC2000	Aged 48 Hrs 200F	80,000 (554)	70,000 (481)	29
SWX 150 (F7P8-ENi1-Ni1)	PC2001	SR 1 Hr @ 1150F	77,000 (533)	65,000 (448)	31
SWX 110 (F8A4-ENi1-Ni1 H8)	PC5341	Aged 48 Hrs 220F	88,000 (603)	76,000 (522)	29
HN-590 (F8P4-ENi1-Ni1)	PC5771	SR 1 Hr @ 1150F	83,000 (573)	70,000 (483)	28
HN-590 (F8A4-ENi1-Ni1)	PC5772	Aged 48 Hrs 220F	85,000 (587)	74,000 (512)	27

Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
SWX 150 (F7A8-ENi1-Ni1)	PC2000	As Welded	-80 (-62)	135,133,138 (183,180,187)	135 (183)	Charpy-V-Notch
SWX 150 (F7P8-ENi1-Ni1)	PC2001	SR 1 Hr @ 1150F	-80 (-62)	136,142,253 (184,193,343)	177 (240)	Charpy-V-Notch
SWX 110 (F8A4-ENi1-Ni1 H8)	PC5341	As Welded	-40 (-40)	70,63,70 (95,85,95)	68 (92)	Charpy-V-Notch
HN-590 (F8P4-ENi1-Ni1)	PC5771	SR 1 Hr @ 1150F	-40 (-40)	65,82,81 (88,111,110)	76 (103)	Charpy-V-Notch
HN-590 (F8A4-ENi1-Ni1)	pc5772	As Welded	-40 (-40)	80,87,91 (108,118,123)	86 (117)	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test		
PC2000	Conforms	Horizontal :	Overhead :	Vertical :
PC2001	Conforms	Horizontal :	Overhead :	Vertical :
PC5341	Conforms	Horizontal :	Overhead :	Vertical :
PC5771	Conforms	Horizontal :	Overhead :	Vertical :
PC5772	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
SWX 150 (F7A8-ENi1-Ni1) / PC2000	0.06	1.09	0.009	0.004	0.22	0.07	0.03	-	0.83	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
SWX 150 (F7P8-ENi1-Ni1) / PC2001	0.06	1.07	0.009	0.004	0.22	0.07	0.04	-	0.84	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
SWX 110 (F8A4-ENi1-Ni1 H8) / PC5341	0.08	1.38	0.011	0.008	0.43	0.09	0.03	-	0.74	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
HN-590 (F8P4-ENi1-Ni1) / PC5771	0.06	1.44	0.012	0.009	0.33	0.07	0.04	-	0.82	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
HN-590 (F8A4-ENi1-Ni1) / PC5772	0.07	1.52	0.013	0.008	0.36	0.07	0.04	-	0.79	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-

Diffusible Hydrogen Collected per AWS A4.3

SWX 110	5.0 ml/100g of weld metal for 5/32 in diameter 32% relative humidity

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").