



## Certificate of Conformance to Requirements for Welding Electrode

**Product Type:** SDX EM14K  
**Classification:** EM14K  
**Specifications:** AWS A5.17/A5.17M; ASME SFA5.17  
**Diameter Tested:** 5/32"  
**Date Tested:** 11/15/2024  
**Date Generated:** 1/17/2025

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 (F7P8-EM14K H8)	575 / DCEP	27.1	51 (1.3)	1 (25)	Room Temp	300(149)	15 (38.1)
SWX-150 (F7A8-EM14K H8)	575 / DCEP	27.1	51 (1.3)	1 (25)	Room Temp	300(149)	15 (38.1)
HN 521 (F7P8-EM14K H8)	575 / DCEP	27.1	51 (1.3)	1 (25)	Room Temp	300(149)	15 (38.1)
HN 521 (F7A8-EM14K H8)	575 / DCEP	27.1	50 (1.3)	1 (25)	Room Temp	300(149)	15 (38.1)
HN-590 (F7A8-EM14K H8)	525 / DCEP	29	45 (1.1)	1 (25)	Room Temp	300(149)	15 (38.1)
HN-590 (F7P8-EM14K H8)	525 / DCEP	29	45 (1.1)	1 (25)	Room Temp	300(149)	15 (38.1)

### Mechanical Properties - Tensile

Shielding Medium	Ref. No.	Testing Conditions	Ult. Tensile Strength psi (MPa)	Yield Strength psi (MPa)	Elong.% in 2"
HN-590 (F7A8-EM14K H8)	PE9273	Aged 48 Hrs 220F	90,000 ( 621 )	76,000 ( 525 )	27
HN-590 (F7P8-EM14K H8)	PE9419	SR 1 Hr @ 1125F	88,000 ( 603 )	74,000 ( 507 )	27
SWX-150 (F7P8-EM14K H8)	PE8915	SR 1 Hr @ 1150F	80,000 ( 548 )	66,000 ( 456 )	31
SWX-150 (F7A8-EM14K H8)	PE8916	Aged 48 Hrs 220F	81,000 ( 558 )	70,000 ( 486 )	31
HN 521 (F7P8-EM14K H8)	PE8917	SR 1 Hr @ 1150F	78,000 ( 539 )	63,000 ( 437 )	33
HN 521 (F7A8-EM14K H8)	PE8918	Aged 48 Hrs 220F	80,000 ( 548 )	68,000 ( 472 )	31

### Mechanical Properties - Impact

Shielding Medium	Ref. No.	Testing Conditions	Temp. F (C)	Individuals ft.lb.(J)	Avg. ft.lb.(J)	Type
SWX-150 (F7P8-EM14K H8)	PE8915	SR 1 Hr @ 1150F	-80 (-62)	125,141,152 (169,191,206)	139 ( 189 )	Charpy-V-Notch
SWX-150 (F7A8-EM14K H8)	PE8916	As Welded	-80 (-62)	188,176,120 (255,239,163)	161 ( 219 )	Charpy-V-Notch
HN 521 (F7P8-EM14K H8)	PE8917	SR 1 Hr @ 1150F	-80 (-62)	128,128,125 (174,174,169)	127 ( 172 )	Charpy-V-Notch
HN 521 (F7A8-EM14K H8)	PE8918	As Welded	-80 (-62)	194,178,136 (263,241,184)	169 ( 230 )	Charpy-V-Notch
HN-590 (F7A8-EM14K H8)	PE9273	As Welded	-80 (-62)	32,25,25 (43,34,34)	27 ( 37 )	Charpy-V-Notch
HN-590 (F7P8-EM14K H8)	PE9275	SR 1 Hr @ 1150F	-80 (-62)	30,28,25 (41,38,34)	28 ( 38 )	Charpy-V-Notch

Ref.No.	Radiographic Inspection	Fillet Weld Test					
PE9273	Conforms	Horizontal :		Overhead :		Vertical :	
PE9275	Conforms	Horizontal :		Overhead :		Vertical :	
PE8915	Conforms	Horizontal :		Overhead :		Vertical :	
PE8916	Conforms	Horizontal :		Overhead :		Vertical :	
PE8917	Conforms	Horizontal :		Overhead :		Vertical :	
PE8918	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	Sb	As
SWX-150 (F7A8-EM14K H8) / PE2151	0.09	1.27	0.015	0.007	0.47	0.08						0.01													
HN-590 (F7A6-EM14K H8) / PE7136	0.13	1.93	0.020	0.007	0.54	0.04						0.02													
SWX-150 (F7P8-EM14K H8) / PE8915	0.08	1.27	0.016	0.005	0.51	0.04						0.01													
HN 521 (F7P8-EM14K H8) / PE8917	0.07	1.19	0.012	0.004	0.52	0.04						0.01													

### Diffusible Hydrogen Collected per AWS A4.3

SWX 150 (F7A8-EM14K H8)	5.6 ml/100g of weld metal for 5/32 in diameter 32% relative humidity
HN-590 (F7A6-EM14K H8)	2.7 ml/100g of weld metal for 5/32 in diameter 43% relative humidity
HN-521 (F7A6-EM14K H8)	6.3 ml/100g of weld metal for 5/32 in diameter 32% relative humidity

*James A. Owens*

James A. Owens, Q.A. Specialist

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.