HOBART
FILLER METALS

Inspection Certificate
In accordance with
EN 10204 3.1

Customer :		
Product : HN-590	Customer P.O.# : 2000-015036/PO:ICO-02553216	Certificate No. : F080726-2
Lot No. : 260731	Mesh Size :	Date of Mfg. : 07/31/2026
Specification : --	Classification : --	Date of Issue : 08/10/2026

CHEMICAL ANALYSIS OF FLUX FOR SUBMERGED ARC WELDING

SiO_2	10.3%
$Al_2O_3 + TiO_2$	35.5%
$MnO + FeO$	13.6%
$CaO + MgO + CaF_2$	40.3%

ISO 9001
Registered Quality Management System

J. M. Wang

Q.C Section J. M. WANG

Manufacturing, Certification and Limited Warranty Agreement

Data for the above supplied product are those obtained when welded and tested accordance with the above specification. All tests for the above classification were satisfied. Other tests and procedures may produce different results. The above supplied product are manufactured by Tien Tai Electrode an ITW Co. located at: No.6 Kaifa 4th Rd., Rende Dist., Tainan City 717, Taiwan R.O.C. Hobart Brothers produces welding consumables under continuing quality assurance programs audited and approved by Lloyd's Register Quality Assurance Limited(LRQA)

HOBART FILLER METALS

Certificate No. :B081026-2

Inspection Certificate
In accordance with
EN 10204 3.1

Customer :

Product : SDX EM14K/HN-590 | Customer P.O.# : 2000-015036/PO:ICO-02553216 | Part Number :

Diameter : 4.0mm | Lot No. : 260706N00S40/260731 | Lot Classification : S1/F1

Classification : F7A6-EM14K-H8 | Date Tested : 08/07/2026 | Level of Testing : Schedule K

Specification : AWS A5.17-'19 | Date of Issue : 08/17/2026

Test Settings

Amps DCEP	Volts	WFS	Shielding Gas	Electrode Stickout	Temperature		Travel Speed
					Preheat	Interpass	
500	28	43 ipm	NONE	35 mm	85±25°F 30±15℃	300±25°F 150±15℃	16±1 ipm
6 Layers, 2 passes on each layer 1 through 6; 7th Layer, 3 passes on cap layer.							

Mechanical Properties Lab Test #2FH07

Item	Ult. Tensile Strength		Yield Strength		Elong % in 2 "	Impact Test Temp.		Charpy V-Notch Values ft.lbf			
Requirement	70000 ~ 95000 490 ~ 660	psi MPa	58000 Min. 400 Min.	psi MPa	22 Min.	-60 -51	°F ℃	20 ft.lbf Min. 27 J Min.			
AS WELDED	84627 583	psi MPa	71684 494	psi MPa	33	-60 -51	°F ℃	41 56	46 62	54 73	Avg.:47 ft.lbf Avg.:64 J

Radiographic		Fillet Weld Test						Moisture %
Inspection:	Conforms	Horizontal:	N/A	Vertical:	N/A	Overhead:	N/A	N/A
Bending Test								

Chemical Composition of Wire and Rod (%)

Elements	C	Mn	Si	S	P	Cu	Ti									
Requirement	0.06 0.19	0.90 1.40	0.35 0.75	Max. 0.025	Max. 0.025	Max. 0.35	0.03 0.17									
Filler Metal	0.10	1.21	0.45	0.006	0.008	0.010	0.06									

Remarks

Production Date :07/06/2026

Hydrogen Content Ave.(ml/100g): 3.4 (according to AWS A4.3; FLUX Re-Drying 350℃×1hr)

Customer special required as follows:

(1)Deposited Metal Chemical Analysis:

C:0.065%,Mn:1.84%,Si:0.472%,S:0.007%,P:0.023%,Cu:0.087%,Ti:0.009%

(2) Wall Neutrality number:32.1

(3)Tensile Strength:520~760Mpa,Yield Strength(0.2%): 415~565MPa,Elongation(%):22 min.

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