



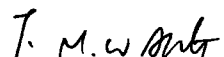
**Certificate of Conformance
to Requirements for Welding Electrode
EN 10204 3.1**

Customer :		
Product : HN-590	Customer P.O.# : 2000-004651/PO:ICO-941217	Certificate No. : F033123-1
Lot No. : 230223	Mesh Size :	Date of Mfg. : 02/23/2023
Specification : --	Classification : --	Date of Issue : 04/10/2023

CHEMICAL ANALYSIS OF FLUX FOR SUBMERGED ARC WELDING

SiO ₂	11.5%
Al ₂ O ₃ + TiO ₂	35.5%
MnO + FeO	13.2%
CaO + MgO + CaF ₂	39.6%





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)



**Certificate of Conformance
to Requirements for Welding Electrode
EN 10204 3.1**

Customer :		
Product : HOBART M12K/HN-590	Customer P.O.# : 2000-004651/PO:ICO-941217	Part Number :
Diameter : 4.0mm	Lot No. : 230109E71S40/230223	Lot Classification :
Classification : F7A4-EM12K	Date Tested : 03/09/2023	Level of Testing :
Specification : AWS A5.17-'19	Date of Issue : 04/10/2023	

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°C	300±25°F 150±15°C	16±1 ipm

6 Layers, 2 passes on each layer 1 through 6; 7th Layer, 3 passes on cap layer; Direction reversed on each layer.

Mechanical Properties Lab Test #2CC09

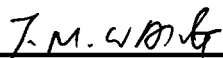
Shielding Gas	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong % in 2 "	Impact Test Temp.	Charpy V-Notch Values ft.lbf		
NONE	AS WELDED	76520 psi 528 MPa	64857 psi 447 MPa	32	-40 °F -40 °C	40	48	46
						Average	45	(61 J)

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								
Filler Metal	0.08	1.05	0.25	0.009	0.009	0.010								

Remarks
Production Date :02/23/2023


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