



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

Customer :

Product : HN-590

Customer P.O.# : 2000-002904/PO:ICO-676775

Certificate No. : F093022-2

Lot No. : 220915

Mesh Size :

Date of Mfg. : 09/15/2022

Specification : --

Classification : --

Date of Issue : 10/06/2022

CHEMICAL ANALYSIS OF FLUX FOR SUBMERGED ARC WELDING

SiO ₂	11.3%
Al ₂ O ₃ + TiO ₂	35.0%
MnO + FeO	13.3%
CaO + MgO + CaF ₂	40.2%



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)



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Customer :		
Product : HOBART M12K/HN-590	Customer P.O.# : 2000-002904/PO:ICO-676775	Part Number :
Diameter : 4.0mm	Lot No. : 220103Z17S40/220915	Lot Classification :
Classification : F7A4-EM12K	Date Tested : 09/27/2022	Level of Testing :
Specification : AWS A5.17-'19	Date of Issue : 10/06/2022	

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 #2BJ27

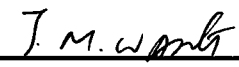
Shielding Gas	Testing Conditions	Ult. Tensile Strength	Yield Strength	Elong % in 2 "	Impact Test Temp.	Charpy V-Notch Values ft.lbf		
NONE	AS WELDED	74813 psi 516 MPa	61443 psi 424 MPa	33	-40 °F -40 °C	50 Average	65 (65 81 J)

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	0.09	1.08	0.23	0.007	0.010	0.010								

Remarks
Production Date :09/15/2022


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