



CERTIFICATE OF WELDING CONSUMABLES

(43,Goedong-ro,Nam-gu,Pohang-si,Gyeongsangbuk-do,KOREA / TEL:054-289-8230 / FAX:054-285-8543)

CUSTOMER : **CHOSUN VINA CO.,LTD.**

DATE : **NOV. 01, 2023**

P . O No. :

Certificate No. : **CS-2311-0038**

Brand Name	Classification	Diameter (mm)	Lot No.	Weight (kg)	Remark
TGC-80D2	AWS ER80S-D2/ AWS ER55S-D2	2.4	7C10232	200	-

1. APPLIED CODE : AWS A5.28/A5.28M:2020 , EN 10204 3.1

2. MECHANICAL PROPERTIES OF WELD METAL						3. RADIOGRAPHIC TEST	4. HEAT TREATMENT
Item	Tension Test				Charpy Absorbed Energy (J) (at -30 °C)	Fig. 4	NR
	Y . S (MPa)	T . S (MPa)	Elon. (%)	R . A (%)			
Spec. (min.)	470	550	17	-	27		
Result	659	754	24.8	-	92, 87, 94 Aver. : 91.0	Accept.	

5. CHEMICAL COMPOSITION (Weld Metal Filler Metal) (unit : %)

Elements	C	Mn	Si	P	S	Cu	Ni	Mo	Other elements Total
Spec. (max.)	0.07-0.12	1.60-2.10	0.50-0.80	0.025	0.025	0.50	0.15	0.40-0.60	0.50
Result	0.097	2.00	0.74	0.011	0.015	0.16	0.038	0.41	0.10

6. FILLET WELD TEST (unit : mm)

Welding Position	Item	Fillet Weld Size	Fillet Weld Leg		Difference Between Length of fillet legs	Convexity	Dimension of Fillet Weld	
		L1	L2	L3				
H	Spec.		Not required				 Concave fillet	 Convex fillet
	Result		Not required					
OH	Spec.		Not required					
	Result		Not required					
V	Spec.		Not required					
	Result		Not required					

7. THE OTHER TESTS

Item	Moisture Test	Hydrogen Test	Bend Test		Remark
Spec.	max. (%)	max. (ml/100g)	Crack : max. mm		
Result	NR	NR	Result	NR	-

We hereby certify that the above materials are satisfactory in compliance with the requirement specified in the contract. Our quality system is certified in accordance with **ISO9001:2015** by DNV Business Assurance B.V., Netherlands

M. H. Jeong

Manager of Quality Assurance Department