



CHOSUN
WELDING

CERTIFICATE OF WELDING CONSUMABLES

(34-13, HWASAN-2GIL, ONSAN-EUP, ULJU-GUN, ULSAN, KOREA / TEL:052-231-3417 / FAX:052-237-2305)

P . O No. :

CUSTOMER : CHOSUN VINA CO., LTD.

DATE : JAN. 29, 2019

Certificate No. : CS-1901-3594

Brand Name	Classification	Diameter (mm)	Lot No.	Weight (kg)	Remark
TGC-317L	AWS ER317L	2.4	E846190001182	40	

1. APPLIED CODE : AWS A5.9/A5.9M: 2012, EN10204 3.1

2. MECHANICAL PROPERTIES OF WELD METAL					3. RADIOGRAPHIC TEST	4. HEAT TREATMENT	
Item	Tension Test				Charpy Absorbed Energy (J) (at °C)	Not required	NR
	Y.S (Mpa)	T.S (Mpa)	Elon. (%)	R.A (%)			
Spec.	Not required						
Result	Blank				Blank	Blank	

5. CHEMICAL COMPOSITION (<input type="checkbox"/> Weld Metal <input checked="" type="checkbox"/> Filler Metal)												(unit : %)
Elements	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	N		Ferrite Number (FN)
Spec. (max.)	0.03	1.0~2.5	0.30~0.65	0.03	0.03	0.75	13.0~15.0	18.5~20.5	3.0~4.0	-		1992 WRC
Result	0.012	1.52	0.39	0.024	0.003	0.16	13.05	18.60	3.10	-		7.4

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							
	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	
					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 GL CERTIFICATION B.V., THE NETHERLAND.

H. J. Lee

Manager of Quality Assurance Department