



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 : FEB. 04, 2021

Certificate No. : CS-2102-3023

Brand Name	Classification	Diameter (mm)	Lot No.	Weight (kg)	Remark
TGC-308H	AWS ER308H	2.4	1880460001211	495	-

1. APPLIED CODE : AWS A5.9/A5.9M: 2017, EN10204 3.1

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

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

Elements	C	Mn	Si	P	S	Cu	Ni	Cr	Mo	N		Ferrite Number (FN)
Spec. (max.)	0.04~ 0.08	1.0~ 2.5	0.30~ 0.65	0.03	0.03	0.75	9.0~ 11.0	19.5~ 22.0	0.50	-		1992 WRC
Result	0.049	1.71	0.41	0.023	0.004	0.11	10.09	19.77	0.16	-		5.7

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 CERTIFICATION B.V., THE NETHERLAND.

H. J. Lee

Manager of Quality Assurance Department