

**ABS**

WELDING CONSUMABLE CERTIFICATE


Certificate No.: 727977-3480352-001Report No.: UL3480352Port of ULSAN, KOREADate 17 OCTOBER 2018

THIS IS TO CERTIFY

THAT THE UNDERSIGNED SURVEYOR TO THIS BUREAU DID, AT THE REQUEST OF CHOSUN WELDING CO., LTD., ATTEND THEIR PLANT AT ULSAN, KOREA, ON THE 10TH DAY OF APRIL, 2018 AND ON SUBSEQUENT DATES, IN ORDER TO CARRY OUT A PLANT SURVEY OF FACILITIES AND ASSOCIATED QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES AND TO WITNESS AND REPORT ON THE ANNUAL APPROVAL TESTING OF WELDING CONSUMABLES; AND,

THAT THE FACILITY IS CONSIDERED CAPABLE OF PROVIDING AN ACCEPTABLE UNIFORM PRODUCT, AND THAT EACH WELDING CONSUMABLE LISTED BELOW WAS FOUND IN COMPLIANCE WITH THE SPECIFICATION INDICATED AND IS ELIGIBLE TO BE PLACED ON THIS BUREAU'S APPROVED WELDING CONSUMABLES LIST IN THE FLUX CORED ARC WELDING SECTION:

TRADE NAME	SPECIFICATION	GRADE OR CLASS	SHIELDING GAS	POSITION	CURRENT/ POLARITY	SIZE
CSF-71T	ABS	2SAH10	100% CO ₂	All, V-Down	DC(+)	1.2~1.6
		2YSAH10				
CSF-71T	ABS	2YSAH10	75%Ar+25%CO ₂	All, V-Down	DC(+)	1.2~1.6
CSF-71LF	ABS	3YSAH10	75%Ar+25%CO ₂	All, V-Down	DC(+)	1.2~1.6
CSF-71SRM	ABS	4YSA(H10)	75%Ar+25%CO ₂	All, V-Down	DC(+)	1.2~1.6
CSM-70T	ABS	2SAH10.	100% CO ₂	F	DC(+)	1.2~1.6
		2YSAH10				
CSF-71U	ABS	3YSAH10	100% CO ₂	All, V-Down	DC(+)	1.2~1.6
CSM-70U	ABS	3YSAH5	100%CO ₂	F	DC(+)	1.2~1.6
CSF-71S	ABS	4Y400SAH5	100% CO ₂	All, V-Down	DC(+)	1.2~1.6
CSF-81T	ABS	2YSAH10	100% CO ₂	All, V-Down	DC(+)	1.2~1.6
CSF-460S	ABS	5YQ460SAH5	100% CO ₂	All, V-Down	DC(+)	1.2~1.4
CSF-500S	ABS	5YQ500SAH5	100% CO ₂	All, V-Down	DC(+)	1.2~1.4
CSF-550S	ABS	5YQ550SAH5	100%CO ₂	All, V-Down	DC(+)	1.2~1.4
CSF-81K2	ABS	5Y400SAH5	100% CO ₂	All, V-Down	DC(+)	1.2~1.6
CSF-308L	AWS A5.22	E308LT0-1	100% CO ₂	F	DC(+)	1.2~1.6
CSF-309L	AWS A5.22	E309LT0-1	100% CO ₂	F	DC(+)	1.2~1.6
CSF-316L	AWS A5.22	E316LT0-1	100% CO ₂	F	DC(+)	1.2~1.6
CSF-309MoL	AWS A5.22	E309LMoT0-1	100% CO ₂	F	DC(+)	1.2~1.6
CSF-308LP	AWS A5.22	E308LT1-1	100% CO ₂	ALL, V-Down	DC(+)	1.2~1.6
(Manufacturer's guaranteed minimum CVN 34J at -196°C)						
CSF-309LP	AWS A5.22	E309LT1-1	100% CO ₂	ALL, V-Down	DC(+)	1.2~1.6
CSF-316LP	AWS A5.22	E316LT1-1	100% CO ₂	ALL, V-Down	DC(+)	1.2~1.6
(Manufacturer's guaranteed minimum CVN 34J at -196°C)						
CSF-2209P	AWS A5.22	E2209T1-1	100% CO ₂	ALL, V-Down	DC(+)	1.2~1.6



Yu-Sik Lee, SURVEYOR

Note: This Certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Certificate is a representation only that the structure, item of material, equipment, machinery or any other item covered by this Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.



WELDING CONSUMABLE CERTIFICATE

Certificate No.: 727977-3480352-002

Report No.: UL3480352

Port of: ULSAN, KOREA

Date: 17 OCTOBER 2018

THIS IS TO CERTIFY

THAT THE UNDERSIGNED SURVEYOR TO THIS BUREAU DID, AT THE REQUEST OF CHOSUN WELDING CO., LTD., ATTEND THEIR PLANT AT ULSAN, KOREA, ON THE 10TH DAY OF APRIL, 2018 AND ON SUBSEQUENT DATES, IN ORDER TO CARRY OUT A PLANT SURVEY OF FACILITIES AND ASSOCIATED QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES AND TO WITNESS AND REPORT ON THE ANNUAL APPROVAL TESTING OF WELDING CONSUMABLES; AND,

THAT THE FACILITY IS CONSIDERED CAPABLE OF PROVIDING AN ACCEPTABLE UNIFORM PRODUCT, AND THAT EACH WELDING CONSUMABLE LISTED BELOW WAS FOUND IN COMPLIANCE WITH THE SPECIFICATION INDICATED AND IS ELIGIBLE TO BE PLACED ON THIS BUREAU'S APPROVED WELDING CONSUMABLES LIST IN THE SUBMERGED ARC WELDING SECTION:

TRADE NAME	SPECIFICATION	GRADE OR CLASS	SHIELDING GAS	POSITION	CURRENT/ POLARITY	SIZE
UC36 x CA502	ABS	2YTM	-	F	AC/DC(+)	2.4~6.4
UC36 x CA502	AWS A5.17	F7A(P)0-EH14	-	F	AC/DC(+)	2.4~6.4
UC36 x CA502H	ABS	2YT, 3YM	-	F	AC/DC(+)	2.4~6.4
UC36 x CA502H	AWS A5.17	F7A(P)2-EH14	-	F	AC/DC(+)	2.4~6.4
UC36 x CA508	ABS	4YT, 5Y400MH5	-	F	AC/DC(+)	2.4~6.4
(Suitable for Tandem Arc Welding)						
UC36 X CA508	AWS A5.17	F7A(P)8-EH14	-	F	AC/DC(+)	2.4~6.4
UC36 x CA506S	ABS	3Y400T, 4Y400M	-	F	AC/DC(+)	2.4~4.8
UC43 x CA514	ABS	3TM, 3YTM	-	F	AC/DC(+)	2.4~6.4
UC43 x CA514	AWS A5.17	F7A(P)4-EL8	-	F	AC/DC(+)	2.4~6.4
UC12K x CA522	ABS	3YTM	-	F	AC/DC(+)	2.4~4.8
UC12K x CA526	ABS	3TM, 3YTM	-	F	AC/DC(+)	2.4~6.4
UC12K x CA526	AWS A5.17	F7A(P)6-EM12K	-	F	AC/DC(+)	2.4~6.4
UC36 x CA50HR x	ABS	3Y	-	F	AC/DC(+)	2.4~4.8
CSI-1 x BS-3W (Suitable for Tandem Arc Welding)						
UC308L x CA101S	AWS A5.9	ER308L	-	F	DC(+)	2.4~4.8
(Manufacturer's guarantee: 520MPa min. TS, 35% min. Elongation, CVN 34J min. at -196°C)						
UC316L x CA101S	AWS A5.9	ER316L	-	F	DC(+)	2.4~4.8
(Manufacturer's guarantee: 490MPa min. TS, 30% min. Elongation, CVN 34J min. at -196°C)						



Yu-Sik Lee, SURVEYOR

Note: This Certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Certificate is a representation only that the structure, item of material, equipment, machinery or any other item covered by this Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.



WELDING CONSUMABLE CERTIFICATE

Certificate No.: 727977-3480352-003

Report No.: UL3480352

Port of ULSAN, KOREA

Date: 17 OCTOBER 2018

THIS IS TO CERTIFY

THAT THE UNDERSIGNED SURVEYOR TO THIS BUREAU DID, AT THE REQUEST OF CHOSUN WELDING CO., LTD., ATTEND THEIR PLANT AT ULSAN, KOREA, ON THE 10TH DAY OF APRIL, 2018 AND ON SUBSEQUENT DATES, IN ORDER TO CARRY OUT A PLANT SURVEY OF FACILITIES AND ASSOCIATED QUALITY ASSURANCE AND QUALITY CONTROL PROCEDURES AND TO WITNESS AND REPORT ON THE ANNUAL APPROVAL TESTING OF WELDING CONSUMABLES; AND,

THAT THE FACILITY IS CONSIDERED CAPABLE OF PROVIDING AN ACCEPTABLE UNIFORM PRODUCT, AND THAT EACH WELDING CONSUMABLE LISTED BELOW WAS FOUND IN COMPLIANCE WITH THE SPECIFICATION INDICATED AND IS ELIGIBLE TO BE PLACED ON THIS BUREAU'S APPROVED WELDING CONSUMABLES LIST IN THE GAS METAL ARC WELDING INCLUDING MIG/TIG WELDING SECTION:

TRADE NAME	SPECIFICATION	GRADE OR CLASS	SHIELDING GAS	POSITION	CURRENT/ POLARITY	SIZE
MGC-308L	AWS A5.9	ER308L	98%Ar + 2%O2	All, V-Down	DC(+)	0.9~1.6
MGC-309L	AWS A5.9	ER309L	98%Ar + 2%O2	All, V-Down	DC(+)	0.9~1.6
TGC-309	AWS A5.9	ER309	100% Ar	All	DC(-)	1.2~3.2
TGC-309L	AWS A5.9	ER309L	100% Ar	All	DC(-)	1.2~3.2
TGC-316L	AWS A5.9	ER316L	100% Ar	All, V-Down	DC(-)	1.2~4.0

(Manufacturer's guarantee: 490MPa min. TS, 30% min. Elongation, CVN 34J min. at -196°C)



Yu-Sik Lee, SURVEYOR

Note: This Certificate evidences compliance with one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping and is issued solely for the use of the Bureau, its committees, its clients or other authorized entities. This Certificate is a representation only that the structure, item of material, equipment, machinery or any other item covered by this Certificate has met one or more of the Rules, guides, standards or other criteria of American Bureau of Shipping as of the date of issue. Parties are advised to review the Rules for the scope and conditions of classification and to review the survey records for a fuller description of any restrictions or limitation on the vessel's service or surveys. The validity, applicability and interpretation of this Certificate is governed by the Rules and standards of American Bureau of Shipping who shall remain the sole judge thereof. Nothing contained in this Certificate or in any notation made in contemplation of this Certificate shall be deemed to relieve any designer, builder, owner, manufacturer, seller, supplier, repairer, operator or other entity of any warranty express or implied.