WELDING CONSUMABLE CERTIFICATE

Certificate No.: 098625-4610627-001

Report No.: 4610627

Port of: Busan, Korea

Date: 27 July 2021

THIS IS TO CERTIFY

THAT THE UNDERSIGNED SURVEYOR TO THIS BUREAU DID, AT THE REQUEST OF ESAB SEAH CORP., ATTEND THE PLANT AT CHANGWON, KOREA, ON THE 20TH DAY OF JANUARY, 2021 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
Dual Shield 7100	ABS	2YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield 7100 Ultra (Weld 71T-9 / ESAB 71)	ABS	3YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield 7100 Ultra (Weld 71T-9 / ESAB 71)	ABS	3YSA H10	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield R-70	ABS	3YSA H10	CO2	FLAT	DCEP	1.2 - 2.4 mm
Dual Shield 7100S	ABS	2YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.4 mm
Dual Shield 8100-W	ABS	3YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed CVN 47J at -30°C						
Dual Shield II 70 Ultra	ABS	3YSA H5	75% Ar, 25% CO2	ALL	DCEP	0.9 - 1.6 mm
Coreweld 111RB	ABS	2YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Coreweld 111 Ultra	ABS	3YSA H10	CO2	FLAT	DCEP	1.2 - 1.6 mm
Coreweld Ultra	ABS	3YSA H10	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Coreweld Ultra	ABS	3YSA H15	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield II 81-K2LH	ABS	4YSA H5	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed CVN 47J at -60°C						
Dual Shield II 81-K2LH	ABS	4YSA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed CVN 47J at -60°C						
Dual Shield II 81-K2	ABS	5Y400SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Coreweld 80-K2	ABS	4Y400SA H10	CO2	F, HF	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed CVN 47J at -60°C						
Dual Shield 70 Ultra Plus	ABS	3YSA H10	90% Ar, 10% CO2	ALL	DCEP	1.2 - 1.6 mm
Dual Shield T-5	ABS	3YSA H10	75% Ar, 25% CO2	ALL, V-down	DC	1.2 - 1.6 mm

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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.

Dual Shield II 71-HI	ABS	4YSA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield 7100SR	ABS	4YSA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield 8100SR	ABS	4Y400SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield II 81-K2 LT	ABS	5Y400SA H5	CO2	ALL, V-down	DCEP	1.2 mm
Dual Shield II 110	AWS A5.29	E111T1-K3M	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield 4130N	ABS	4YQ550SA H5	CO2	ALL, V-down	DCEP	1.2 mm
Dual Shield II 71-SH	ABS	4Y400SA, H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Coreweld Prime 111 Ultra	ABS	3YSA H5	CO2	F, HF	DCEP	1.2 - 1.6 mm
Dual Shield Prime 71 H4	ABS	3YSA H5	75% Ar, 25% CO2	ALL	DCEP	1.2 - 1.6 mm
Dual Shield II 91-K2	ABS	5YQ500SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield Prime 81-K2	ABS	5Y400SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield Prime 81Ni1 H4	ABS	5YQ460SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield Prime 81Ni1M H4	ABS	5YQ460SA H5	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield II 81-OS	ABS	5YQ460SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield II 81-HS	ABS	5YQ460SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield T-115	AWS A5.29	E110T5-K4M	75% Ar, 25% CO2	F, HF	DCEP	1.2 - 1.6 mm
Dual Shield 9100	AWS A5.29	E91T1-G	CO2	ALL	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed Y.P. Min. 540N/㎟, T.S. 620~760N/㎟, E.L. Min. 17%						
Dual Shield II 101-TC	ABS	5YQ500SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield II 101-TC	AWS A5.29	E91T1-K2	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Coreweld 90-K2	ABS	5YQ500SA H5	CO2	F, HF	DCEP	1.2 - 1.6 mm
Dual Shield 80EG	ABS	3YSA H5	CO2	F, H	DCEP	1.2 - 1.6 mm
Dual Shield Prime 71LT H4	ABS	4Y400SA H5	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Dual Shield Prime 71LT H4	ABS	4Y400SA H5	75% Ar, 25% CO2	ALL, V-down	DCEN	1.2 - 1.6 mm
Coreshield 8 Plus	ABS	5Y400SA H5	-	ALL, V-down	DCEP	1.6 mm
Coreweld 111RB (Tan.)	ABS	3YA H10	CO2	FLAT	DCEP	1.2 - 2.4 mm
Coreweld 111 Ultra (Tan.)	ABS	3YA H10	CO2	FLAT	DCEP	1.2 - 2.0 mm
Coreweld 80-K2 (Tandem)	ABS	4Y400A H10	CO2	FLAT, HF	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed CVN 47J at -60°C						
Coreweld 90-K2 (Single)	ABS	5YQ500A H5	CO2	F, HF	DCEP	1.2 - 1.6 mm
Coreweld Prime 111 Ultra (Single)	ABS	3YA H5	CO2	F, HF	DCEP	1.2 - 1.6 mm
Coreweld Prime 111 Ultra (Tandem)	ABS	3YA H5	CO2	F, HF	DCEP	1.2 - 1.6 mm
Dual Shield Prime 71 H4	ABS	3YA H5	75% Ar, 25% CO2	F, HF	DCEP	1.2 - 1.6 mm
Shield-Bright 308L	AWS A5.22	E308LT1-1	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Shield-Bright 308L	AWS A5.22	E308LT1-4	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Shield-Bright 309L	AWS A5.22	E309LT1-1	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Shield-Bright 309L	AWS A5.22	E309LT1-4	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Shield-Bright 316L	AWS A5.22	E316LT1-1	CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Shield-Bright 316L	AWS A5.22	E316LT1-4	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm

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Shield-Bright 308L X-tra	AWS A5.22	E308LT0-1	CO2	Flat, Horizon.	DCEP	1.2 - 1.6 mm
Shield-Bright 309L X-tra	AWS A5.22	E309LT0-1	CO2	Flat, Horizon.	DCEP	1.2 - 1.6 mm
Shield-Bright 316L X-tra	AWS A5.22	E316LT0-1	CO2	Flat, Horizon.	DCEP	1.2 - 1.6 mm
Shield-Bright 2209	AWS A5.22	E2209T1-1	CO2	ALL	DCEP	1.2 - 1.6 mm
Shield-Bright 2209	AWS A5.22	E2209T1-4	75% Ar, 25% CO2	ALL, V-down	DCEP	1.2 - 1.6 mm
Cryo-shield 308L	AWS A5.22	E308LT1-1	CO2	ALL	DCEP	1.2 - 1.6 mm
* Manufacturer's guaranteed Min. CVN 27J at -196°C, Min. Lateral Expansion: 0.38 mm and Ferrite Number (FN): 3~8						
Cryo-shield 316L	AWS A5.22	E316LT1-1	CO2	ALL	DCEP	1.2 mm
* Manufacturer's guaranteed Min. CVN 34J and Min. Lateral Expansion: 0.38 mm at -196°C						
Dual Shield 7100SRM	ABS	5Y400SA H5	75% Ar, 25% CO2	ALL	DCEP	1.2 - 1.6 mm
Coreweld 70SH	ABS	4Y400SA H5	CO2	F, H	DCEP	1.2 - 1.6 mm
Coreshield 71T-8 OS	AWS A5.29	E71T8-Ni1JH8	-	ALL	DCEN	2.0 mm
Cryo-Shield Ni5 Plus	Manufacturer's Guarantee		CO2	ALL	DCEP	1.2 mm
* Manufacturer's guaranteed T.S. Min. 540 MPa, Y.S. Min. 390 MPa, Elong. Min. 30 %, CVN Min. 34J at -120°C						
Cryo-Shield Ni9	Manufacturer's Guarantee		CO2	ALL	DCEP	1.2 mm
* Manufacturer's guaranteed T.S. Min. 690 MPa, Y.S. Min. 400 MPa, Elong. Min. 25 %, CVN Min. 34J at -196°C						
Cryo-Shield LNG	Manufacturer's Guarantee		CO2	ALL	DCEP	1.2 mm
* Manufacturer's guaranteed T.S. Min. 690 MPa, Y.S. Min. 420 MPa, Elong. Min. 25 %, CVN Min. 34J at -196°C						

ABS BUSAN

Jang, Hyun-Seok, SURVEYOR

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