



WELDING CONSUMABLE CERTIFICATE

Certificate No.: 848327-5289253-001_____

Report No.: 5289253_____

Port of: KOBE, JAPAN_____

Date: 30 NOVEMBER 2022_____

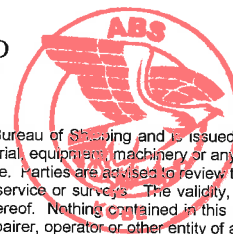
THIS IS TO CERTIFY

THAT THE UNDERSIGNED SURVEYOR TO THIS BUREAU DID, AT THE REQUEST OF KOBE STEEL, LTD. FUKUCHIYAMA PLANT, JAPAN, ATTEND THEIR PLANT AT FUKUCHIYAMA & FUJISAWA, JAPAN, ON THE 24TH DAY OF MAY, 2022 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
TG-S1CM	**	**	Ar	All	DCEN	0.8-3.2
** TIG welding for 1.25Cr/0.50 Mo steel; Properties under stress relieved condition: Min. T.S. 520 N/mm2, Min. Y.P. 315 N/mm2 and Elongation Min. 22%						
TG-S2CM	**	**	Ar	All	DCEN	0.8-3.2
** TIG welding for 2.25Cr/1.0 Mo steel; Properties under stress relieved condition Manufacturer's Specification: Min. T.S. 520 N/mm2, Min. Y.P. 315 N/mm2 and Elongation Min. 18%						
TG-SM	**	**	Ar	All	DCEN	1.6-3.2
** Manufacturer's Guaranteed properties: Min. Y.S. 400 N/mm2, T.S. 550 N/mm2, Elongation 25%, CVN Value: Min. 34 Joule at 0 Cen. Deg. And chemical composition of Wire(%) : C 0.05-0.12, Mn 1.50 max, Si 0.80 max, S 0.025 max, P 0.025 max, Mo 0.40-0.65, Ni 0.20 max, Cu 0.40 max, Heat Treat: SR 620 Cen. Deg. For 1Hr suitable for welding 0.5% Mo steel by spray transfer arc.						
TG-S60A	ABS	5YQ460SA	Ar	All	DCEN	1.2-2.4
NO13924	**	**	Ar	Flat	DCEN	2.4-3.2
** Manufacturer's guaranteed properties: Min.: Y.S. 370 N/mm2, T.S. 550-650 N/mm2, Elongation 19%, Impact Test: : Ave. min. 25J at 0 Cen. Deg., Heat Treatment: SR(720 Cen. Deg. x 38 Hr)						
TG-S51T	ABS	3Y	Ar	F,V-Up, H, OH	DCEN	1.6,2.0,2.4,3.2
MG-50D	ABS	3YSA, 4Y400	C1	All, V-Down	DCEP	1.2-1.4
MG-50D	ABS	3YSA, 4Y400	C1	Flat	DCEP	1.6

TO BE CONTINUED



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.

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TRADE NAME	SPECIFICATION	GRADE OR CLASS	SHIELDING GAS	POSITION	CURRENT/ POLARITY	SIZE
MG-50D/M-GRITS/ FB-B3	ABS	2YA**	C1	Flat	DCEP	1.6mm
** Suitable for one-side welding and subject to satisfactory procedure tests at user's plant						
MG-S50LT	ABS	3YSA**	M21	F, H, V-Up	DCEP	1.2
** Manufacturer's guaranteed Min. CVN 34 Joule at minus 60 Cen. Deg.						
MG-60	ABS	3YQ500	C1	F, H, V-Up, HF	DCEP	1.2-1.6
MG-S1CM	**	**	M21	All	DCEP	0.8-1.6
** Manufacturer's guaranteed properties: Min.: T.S. 550MPa, Y.S. 470 MPa, Elongation 19%, PWHT: 620 +/-15 Cen. Deg. x 1Hr						
MG-1CM	AWS A5.28	ER80S-G	C1	All	DCEP	1.2-1.6
MG-SM	AWS A5.28	ER80S-G**	M21	Flat	DCEP	1.0-1.6
** Manufacturer's Guaranteed properties: Min. Y.S. 400 N/mm2, T.S. 550 N/mm2, Elongation 25%, CVN Value: Min. 34 Joule at 0 Cen. Deg. And chemical composition of Wire(%) : C 0.15 max, Mn 0.60-1.60, Si 0.30-0.90, S 0.025max, P 0.025 max, Mo 0.40-0.65, Cu 0.40 max, Heat Treat: SR 620 Cen. Deg. For 1Hr suitable for welding 0.5% Mo steel by spray transfer arc.						
MG-2CM	AWS A5.28	ER90S-G	C1	All	DCEP	1.2-1.6
MG-S50	ABS	3YSA	M21	F, V-Up, H, OH	DCEP	1.2,1.4,1.6



 T. OKAMOTO, SURVEYOR

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