



NIPPON KAIJI KYOKAI

Approval No. NKY-3032
Certificate No. TA20866E

Certificate OF TYPE APPROVAL

Article: Welding Consumables for High Tensile Steels for Hull and High Strength Rolled Steels for Offshore Structures

Brand: DW-460L

Applicant: Kobelco Welding of Korea Co., Ltd.
Changwon, Gyeongnam, Korea

Manufacturer: Kobelco Welding of Korea Co., Ltd.
Changwon, Gyeongnam, Korea

Grade: KSW5Y46G(C)H5 and KSW63Y47G(C)H5

Welding Process: Semi-Automatic Welding (MAG Welding)

Welding Positions and Max. Diameter of Wire: See Table 1

Current: DCEP

Shielding Gas: CO₂

Remark: For annual inspection, mechanical properties are to comply with the requirements specified in Table 2.

Table 1 Welding Positions and Max. Diameter of Wire for Both Grades

Butt Weld		Fillet Weld	
Flat:	1.4mm	Flat:	1.4mm
Horizontal:	1.4mm	Horizontal Vertical:	1.4mm
Overhead:	Not Applicable	Horizontal:	1.4mm
Vertical Upward:	1.4mm	Horizontal Overhead:	1.4mm
Vertical Downward:	Not Applicable	Overhead:	1.4mm
		Vertical Upward:	1.4mm
		Vertical Downward:	1.4mm

THIS IS TO CERTIFY that the above mentioned welding consumable has been approved by the NIPPON KAIJI KYOKAI in accordance with the requirements of the Society's Rules.

This Certificate will remain in force until 20 September 2021.

Issued at Tokyo on 28 May 2020.




Y. Takao
General Manager
Material and Equipment Department

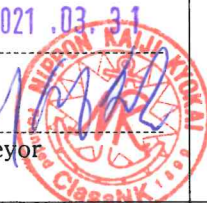
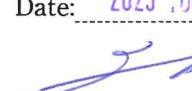
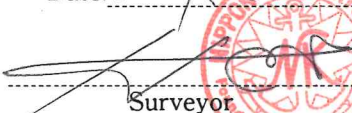
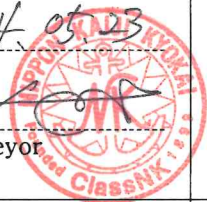
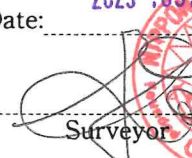
Note : (1) The validity of this certificate may be renewed by endorsement on the attached sheet upon completion of the annual inspections.
(2) This certificate was rewritten because of change of the applicant's name and the manufacturer's name.

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Table 2 Mechanical Properties

Deposited Metal Test				
Tensile Test			Impact Test	
Tensile strength (N/mm ²)	Yield point (N/mm ²)	Elongation (%)	Testing temperature (°C)	Minimum mean absorbed energy (J)
570~720	460 min.	20 min.	-60	47

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The validity of this certificate has been renewed until <u>2022.09.23</u> . Date: <u>2021.03.31</u>  Surveyor 	The validity of this certificate has been renewed until _____ . Date: _____ _____ Surveyor
The validity of this certificate has been renewed until <u>2023.09.20</u> . Date: <u>2022.05.26</u> <u>S.H. Lee</u> Surveyor 	The validity of this certificate has been renewed until _____ . Date: _____ _____ Surveyor
The validity of this certificate has been renewed until <u>2024.09.20</u> . Date: <u>2023.06.08</u>  Surveyor 	The validity of this certificate has been renewed until _____ . Date: _____ _____ Surveyor
The validity of this certificate has been renewed until <u>2025.09.20</u> . Date: <u>2024.05.23</u>  Surveyor 	The validity of this certificate has been renewed until _____ . Date: _____ _____ Surveyor
The validity of this certificate has been renewed until <u>2026.09.20</u> . Date: <u>2025.05.29</u>  Surveyor 	The validity of this certificate has been renewed until _____ . Date: _____ _____ Surveyor