



NIPPON KAIJI KYOKAI

Certificate

OF

TYPE APPROVAL

Approval No. NKY-3096
Certificate No. TA22439E

Article: Welding Consumables for High Tensile Steels for Hull
Brand: DW-S1LG / KL4
[Wire / Backing]
Applicant: Kobe Steel, Ltd., Ibaraki Plant
2-19, Higashi-Unobe-Cho, Ibaraki, Osaka, Japan
Manufacturer: Kobe Steel, Ltd., Ibaraki Plant
2-19, Higashi-Unobe-Cho, Ibaraki, Osaka, Japan
Grade: KEW54Y40
KEW55Y40
Welding Process: Electro-Gas 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.

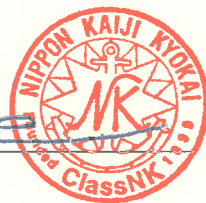
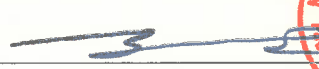
Table 1 Welding Positions and Max. Diameter of Wire for Both Grades

| Butt Weld | | Fillet Weld | |
|--------------------|----------------|----------------------|----------------|
| Flat: | Not Applicable | Flat: | Not Applicable |
| Horizontal: | Not Applicable | Horizontal Vertical: | Not Applicable |
| Overhead: | Not Applicable | Horizontal: | Not Applicable |
| | | Horizontal Overhead: | Not Applicable |
| | | Overhead: | Not Applicable |
| Vertical Upward: | 1.6 mm | Vertical Upward: | Not Applicable |
| Vertical Downward: | Not Applicable | Vertical Downward: | Not Applicable |

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 25 June 2023.

Issued at Tokyo on 15 June 2022.



 Y. Takao
 General Manager
 Material and Equipment Department

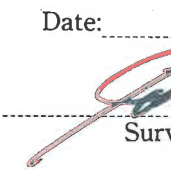

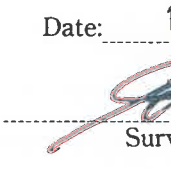

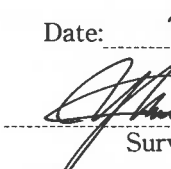

- Notes :
- (1) The validity of this certificate may be renewed by endorsement on the attached sheet upon completion of the annual inspections.
 - (2) This certificate was rewritten because of addition of grade of welding consumable.

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Table 2 Mechanical Properties

| Butt Weld Test | | | | | |
|--|--|-------------------------------------|-------------------|-----------------------------|-------------------------------------|
| Tensile Test | Longitudinal Tensile Test | | | Impact Test | |
| Tensile strength (N/mm ²) | Tensile strength (N/mm ²) | Yield point (N/mm ²) | Elongation (%) | Testing temperature (°C) | Minimum mean absorbed energy (J) |
| 510 min. | 510~690 | 400 min. | 22 min. | -60 | 39 |

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| | |
|---|---|
| <p>The validity of this certificate has been renewed until <u>25. JUN. 2024</u> .</p> <p>Date: <u>6. MAR. 2023</u></p> <p>  Surveyor</p> | <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> |
| <p>The validity of this certificate has been renewed until <u>25. JUN. 2025</u> .</p> <p>Date: <u>17. MAR. 2024</u></p> <p>  Surveyor</p> | <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> |
| <p>The validity of this certificate has been renewed until <u>25. JUN. 2026</u> .</p> <p>Date: <u>16. MAR. 2025</u></p> <p>  Surveyor</p> | <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> |
| <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> | <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> |
| <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> | <p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p> |