



NIPPON KAIJI KYOKAI

Approval No. NKY-3099
Certificate No. TA17708E

Certificate

OF

TYPE APPROVAL FOR WELDING CONSUMABLE

Brand: DW-S43G / KL-4
[Wire / Backing]

Applicant: Kobe Steel Ltd., Ibaraki Plant
Ibaraki, Osaka, Japan

Manufacturer: Kobe Steel Ltd., Ibaraki Plant
Ibaraki, Osaka, Japan

Grade: KEW53
KEW52Y40

Welding Process: Electro-Gas Welding

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

Current: DCEP

Shielding Gas: CO₂

Applicable Parent Material: High Tensile Steels for Hull

Remarks: 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 2018.

Issued at Tokyo on 12 May 2017.



H. Kobayashi

General Manager

Material and Equipment Department



Note : The validity of this certificate may be renewed by endorsement on the attached sheet upon completion of the annual inspections.

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Table 2 Mechanical Properties

Butt Weld Test ¹⁾					
Parent Material	Tensile test	Longitudinal Tensile test ²⁾		Impact Test	
	Tensile strength (N/mm ²)	Tensile strength (N/mm ²)	Yield point (N/mm ²)	Testing temperature (°C)	Minimum mean absorbed energy (J)
KA32, KA36, KD32, KD36, KE32, KE36	490 min.	490~660	375 min.	-20	34
KA40, KD40	510 min.	510~690	400 min.	0	39





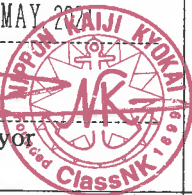
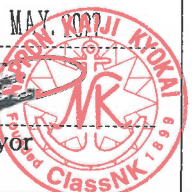
Note: 1) Both the approved specific grades of applicable parent material are to be applied for each test assembly.

2) For annual inspection, mechanical properties of longitudinal tensile test are to comply with the following requirements.

- a) Tensile strength(N/mm²) : 510~660
- b) Yield point(N/mm²) : 400 min.

Note: This certificate was rewritten because of addition of grade of welding consumable.

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<p>The validity of this certificate has been renewed until <u>25. JUN. 2019</u> .</p> <p>Date: <u>14. MAY. 2019</u></p> <p><u>K. Chimoto</u> Surveyor</p> 	<p>The validity of this certificate has been renewed until <u>25. JUN. 2024</u> .</p> <p>Date: <u>6. MAY. 2024</u></p> <p><u>[Signature]</u> Surveyor</p> 
<p>The validity of this certificate has been renewed until <u>25. JUN. 2020</u> .</p> <p>Date: <u>30. AUG. 2019</u></p> <p><u>[Signature]</u> 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. 2021</u> .</p> <p>Date: <u>15. MAY. 2021</u></p> <p><u>[Signature]</u> 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. 2022</u> .</p> <p>Date: <u>14. MAY. 2022</u></p> <p><u>[Signature]</u> 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. 2023</u> .</p> <p>Date: <u>16. MAY. 2023</u></p> <p><u>[Signature]</u> Surveyor</p> 	<p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p>