



# NIPPON KAIJI KYOKAI

Approval No. NKY-3322  
Certificate No. TA201077E



## *Certificate* OF TYPE APPROVAL

Article: Welding Consumables for High Tensile Steels for Hull  
 Brand: DW-460L  
 Applicant: Kobelco Welding of Qingdao Co., Ltd.  
 Qingdao, Shandong, China  
 Manufacturer: Kobelco Welding of Qingdao Co., Ltd.  
 Qingdao, Shandong, China  
 Grade: KSW5Y46G(C)H5  
 KSW63Y47G(C)H5  
 Welding Process: Semi-Automatic Welding (MAG Welding)  
 Welding Positions and Max. Diameter of Wire: See Table 1  
 Current: DCEP  
 Shielding Gas: CO<sub>2</sub>  
 Remark: For annual inspection, mechanical properties are to comply with the requirements specified in Table 2.

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 15 February 2021.

Issued at Tokyo on 16 September 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.

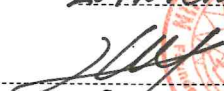
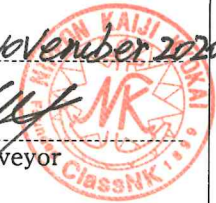
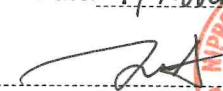
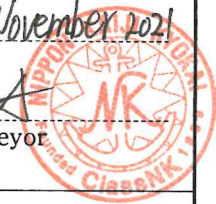





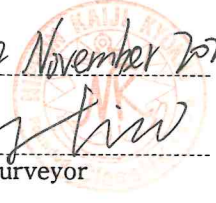
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Table 1 Welding Positions and Max. Diameter of Wire for Both Grades

Butt Weld		Fillet Weld	
Flat:	1.4mm	Flat:	Not Applicable
Horizontal:	1.4mm	Horizontal Vertical:	Not Applicable
Overhead:	1.4mm	Horizontal:	1.4mm
Vertical Upward:	1.4mm	Horizontal Overhead:	Not Applicable
Vertical Downward:	Not Applicable	Overhead:	1.4mm
		Vertical Upward:	Not Applicable
		Vertical Downward:	1.2mm

Table 2 Mechanical Properties

Deposited Metal Test				
Tensile Test			Impact Test	
Tensile Strength (N/mm <sup>2</sup> )	Yield point (N/mm <sup>2</sup> )	Elongation (%)	Testing temperature (°C)	Minimum mean absorbed energy (J)
570~720	460 min.	20 min.	-20	53
			-60	47

<p>The validity of this certificate has been renewed          until <u>15 February 2022</u> .</p> <p>Date: <u>20 November 2020</u></p> <p>          Surveyor</p> 	<p>The validity of this certificate has been renewed          until <u>15 February 2023</u> .</p> <p>Date: <u>19 November 2021</u></p> <p>          Surveyor</p> 
<p>The validity of this certificate has been renewed          until <u>15 February 2024</u> .</p> <p>Date: <u>18 November 2022</u></p> <p>          Surveyor</p> 	<p>The validity of this certificate has been renewed          until <u>15 February 2025</u> .</p> <p>Date: <u>17 November 2023</u></p> <p>          Surveyor</p> 
<p>The validity of this certificate has been renewed          until <u>15 February 2026</u> .</p> <p>Date: <u>22 November 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 _____ .</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>