



NIPPON KAIJI KYOKAI

Approval No. NKY-3568
Certificate No. TA22643E

Certificate

OF TYPE APPROVAL

Article: Welding Consumables for High Strength Rolled Steels for Offshore Structures
Brand: DW-A80L
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: KSW4Y69G(M2)H5
Welding Process: Semi-Automatic Welding (MAG Welding)
Welding Positions and Max. Diameter of Wire: See Table 1
Current: DCEP
Shielding Gas: Ar+CO₂
Remarks: 1) Additionally-guaranteed impact test properties:
Minimum mean absorbed energy at $-60\text{ }^{\circ}\text{C} \geq 47\text{J}$ for deposited metal.
2) For annual inspection, test requirement and mechanical properties are to comply with Table 2 and Table 3 (see the reverse side).


Table 1 Welding Positions and Max. Diameter of Wire

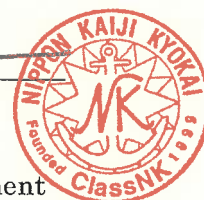
Butt Weld		Fillet Weld	
Flat:	1.2mm	Flat:	1.2mm
Horizontal:	1.2mm	Horizontal Vertical:	1.2mm
Overhead:	1.2mm	Horizontal:	1.2mm
		Horizontal Overhead:	1.2mm
		Overhead:	1.2mm
Vertical Upward:	1.2mm	Vertical Upward:	1.2mm
Vertical Downward:	Not Applicable	Vertical Downward:	Not Applicable

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 21 July 2023.

Issued at Tokyo on 22 July 2022.


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 address and the manufacturer's address.

Table 2 Test Requirement for Annual Inspection

Kind of test	Test assembly					Kind and number of test specimens to be taken from test assembly
	Welding position	Diameter of wire (mm)	Number	Dimensions	Plate thickness (mm)	Tensile test specimen: 1 Impact test specimen: 2 sets (each set for -40°C and -60°C)
Deposited metal test	Flat	See Note 1)	1	See Note 2)	20	

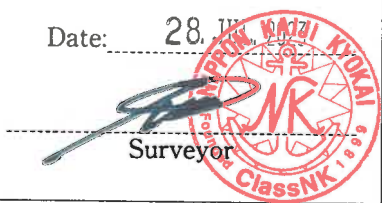
Notes:

- 1) The diameter of the wire is to be within the range specified by Kobe Steel, Ltd., Ibaraki Plant but not exceeding the maximum diameter approved.
- 2) To be in accordance with the Fig. M6.1, Chapter 6, Part M of the NK Rules.

Table 3 Mechanical Properties for Annual Inspection

Tensile Test			Impact Test	
Tensile strength (N/mm ²)	Yield point (N/mm ²)	Elongation (%)	Testing temperature (°C)	Minimum mean absorbed energy (J)
770~940	690 min.	17 min.	-40	69
			-60	47

Certificate No. TA22643E

<p>The validity of this certificate has been renewed until <u>21. JUL. 2024</u> .</p> <p>Date: <u>28. JUL. 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>
<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>