



NIPPON KAIJI KYOKAI

Certificate

OF

TYPE APPROVAL

Approval No. NKY-3472
Certificate No. TA191037E

Article: Welding Consumables for Stainless Steels
 Brand: DW-2594
 Applicant: Kobe Steel Ltd., Fujisawa Plant
 Fujisawa, Kanagawa, Japan
 Manufacturer: Kobe Steel Ltd., Fujisawa Plant
 Fujisawa, Kanagawa, Japan
 Grade: Manufacturer's Specification
 Welding Process: MAG Welding
 Welding Positions and Max. Diameter of Wire: See Table 1
 Current: DCEP
 Shielding Gas: CO₂
 Applicable Grade of Parent Material: 1) "KSUS329J4L and KSUS329J3L", "S32750, S32760, S31803 and S32205 specified in ASTM A240" and Equivalent Duplex Stainless Steels.
 2) Combination of parent materials corresponding to filler material grade "C" specified in Table A. 3, API Recommended Practice 582 (2009).
 Remarks: 1) Chemical composition and mechanical properties are to comply with the requirements specified in Table 2 and Table 3.
 2) Test requirements for annual inspection are to comply with Table 4.

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 13 June 2020.

Issued at Tokyo on 14 June 2019.

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 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:	Not Applicable	Horizontal:	1.2mm
Vertical Upward:	1.2mm	Horizontal Overhead:	Not Applicable
Vertical Downward:	Not Applicable	Overhead:	Not Applicable
		Vertical Upward:	1.2mm
		Vertical Downward:	Not Applicable

Table 2 Chemical Composition of Deposited Metal

C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N	W
0.04	1.00	0.50	0.04	0.03	8.00	24.0	2.50	1.50	0.20	1.0
max.	max.	~ 2.00	max.	max.	~ 10.5	~ 27.0	~ 4.00	max.	~ 0.30	max.

Table 3 Mechanical Properties


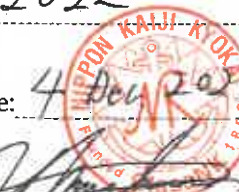
Deposited Metal Test					Butt Weld Test		
Tensile Test			Impact Test		Tensile Test		Impact Test
Tensile Strength (N/mm ²)	Yield point (N/mm ²)	Elongation (%)	Testing temperature (°C)	Minimum mean absorbed energy (J)	Tensile Strength (N/mm ²)	Testing temperature (°C)	Minimum mean absorbed energy (J)
800 min.	550 min.	15 min.	-20	40	800 min.	-20	40

Table 4 Test Requirements for Annual Inspection

Kind of test	Test assembly ^{1), 2), 3), 4)}			Kind and number of test specimens to be taken from test assembly
	Number	Plate thickness (mm)	Welding position	
Deposited metal test	1	20	Flat	Tensile test specimen ^{5), 7)} : 1 Impact test specimen ^{6), 7)} : 1 set

Notes:

- 1) The approved applicable grade of parent material is to be applied. Other parent material with appropriate buttering may be applied subject to the approval of the Society.
- 2) Shape and dimension of test assembly are to be in accordance with Fig. M6.1, Chapter 6, Part M of the NK Rules.
- 3) Test assembly is to be welded in accordance with 6.4.5, Chapter 6, Part M of the NK Rules.
- 4) The diameter of the wire is to be within the range specified by Kobe Steel Ltd., Fujisawa Plant but not exceeding the maximum diameter approved.
- 5) Kind of test specimen is to be U1A specimen shown in Table M3.1, Chapter 3, Part M of the NK Rules.
- 6) Kind of test specimen is to be U4 specified in 3.2.4-2, Chapter 3, Part M of the NK Rules.
- 7) Mechanical properties are to comply with the requirements specified in Table 3.

<p>The validity of this certificate has been renewed until <u>13 Jun. 2021</u> .</p> <p>Date: <u>4 DEC 2019</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>13 Jun 2022</u> .</p> <p>Date: <u>4 Dec 2020</u></p> <p> Surveyor</p>	<p>The validity of this certificate has been renewed until _____ .</p> <p>Date: _____</p> <p>_____ Surveyor</p>
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