NIPPON KAIJI KYOKAI

Certificate

OF

TYPE APPROVAL

Approval No. NKY-3443
Certificate No. TA181346E

Article	: Welding Consumables
Brand	: TG-S2594
Applicant	: Kobe Steel Ltd., Fukuchiyama Plant
	: Fukuchiyama, Kyoto, Japan
Manufacturer	: West Japan Stainless Steel Wire Co., Ltd.
	: Kumage, Yamaguchi, Japan
Grade	: Manufacturer's Specification
Welding Process	: TIG Welding
Welding Positions and Max. Diameter of Wire/Filler Rod	: See Table 1 and Table 2
Current	: DCEN
Shielding Gas	: Ar
Applicable Parent Material	: Stainless Steels
Specific Grade	: "KSUS329J4L and KSUS329J3L", "S32750, S32760, S31803 and S32205 specified in ASTM A240" and Equivalent Duplex Stainless Steels
Remarks:	1) Chemical composition and mechanical properties are to comply with the requirements specified in Table 3 and Table 4. 2) Test requirements for annual inspection are to comply with Table 5.

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 November 2019.
Issued at Tokyo on 16 November 2018.

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:	1.6mm	Flat:	1.6mm
		Horizontal Vertical:	1.6mm
Horizontal:	1.6mm	Horizontal:	1.6mm
Overhead:	1.6mm	Horizontal Overhead:	1.6mm
		Overhead:	1.6mm
Vertical Upward:	1.6mm	Vertical Upward:	1.6mm
Vertical Downward:	Not Applicable	Vertical Downward:	Not Applicable

Table 2 Welding Positions and Max. Diameter of Filler Rod

Butt Weld		Fillet Weld	
Flat:	3.2mm	Flat:	3.2mm
		Horizontal Vertical:	3.2mm
Horizontal:	3.2mm	Horizontal:	3.2mm
Overhead:	3.2mm	Horizontal Overhead:	3.2mm
		Overhead:	3.2mm
Vertical Upward:	3.2mm	Vertical Upward:	3.2mm
Vertical Downward:	Not Applicable	Vertical Downward:	Not Applicable

Table 3 Chemical Composition of Wire / Filler Rod

C	Si	Mn	S	P	Ni	Cr	Mo	Cu	W	N
0.03 max.	1.0 max.	2.5 max.	0.02 max.	0.03 max.	8.0 ～ 10.5	24.0 ～ 27.0	2.5 ～ 4.5	1.5 max.	1.0 max.	0.20 ～ 0.30

Table 4 Requirements of Mechanical Properties

Deposited Metal Test					Butt Weld Test (Base Metal: S32750)		
Tensile Test			Impact Test		Tensile test	Impact Test	
0.2 % Proof stress (N/mm^2)	Tensile strength (N/mm^2)	Elongation (%)	Testing temperature (℃)	Minimum mean absorbed energy (J)	Tensile strength (N/mm^2)	Testing temperature (℃)	Minimum mean absorbed energy (J)
550 min.	800 min.	15 min.	−20	40	795 min.	−20	40

Table 5 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 specific grades of applicable parent material are 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 and 6.7.5 Chapter 6, Part M of the NK Rules.
4) The diameter of the wire / filler rod is to be within the range specified by Kobe Steel Ltd., Fukuchiyama Plant but not exceeding the maximum diameter approved.
5) Kind of test specimen is to be U1A specified 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 4.

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The validity of this certificate has been renewed until 15. NOV. 2020. Date: 28. JUN. 2019 Surveyor	The validity of this certificate has been renewed until . Date: Surveyor
The validity of this certificate has been renewed until 15. NOV. 2021. Date: 5. JUN. 2020 Surveyor	The validity of this certificate has been renewed until . Date: Surveyor
The validity of this certificate has been renewed until 15. NOV. 2022. Date: 4. JUN. 2021 Surveyor	The validity of this certificate has been renewed until . Date: Surveyor
The validity of this certificate has been renewed until 15. NOV. 2023. Date: 3. JUN. 2022 Surveyor	The validity of this certificate has been renewed until . Date: Surveyor
The validity of this certificate has been renewed until 15. NOV. 2024. Date: 2. JUN. 2023 Surveyor	The validity of this certificate has been renewed until . Date: Surveyor