



# NIPPON KAIJI KYOKAI

## Certificate

OF


### TYPE APPROVAL

Approval No. NKY-3637  
Certificate No. TA231093E

Article	: Welding Consumables
Brand	: TG-X316L
Applicant	: Kobe Steel Ltd., Ibaraki Plant : 2-19, Higashiunobe-cho, Ibaraki-shi, Osaka, Japan
Manufacturer	: Kobe Steel Ltd., Ibaraki Plant : 2-19, Higashiunobe-cho, Ibaraki-shi, Osaka, Japan
Grade	: Manufacturer's Specification
Welding Process	: TIG Welding
Welding Positions and Max. Diameter of Filler Rod:	See Table 1
Current	: DCEN
Shielding Gas	: Ar
Applicable Parent Material:	Stainless Steels
Specific Grade:	1) KSUS316 and KSUS316L specified in Part K of the Rules and Equivalent Steels 2) KSUS304 and KSUS304L specified in Part K of the Rules and Equivalent Steels
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. 3) The welding consumables are to be applied only for root pass of one side butt joint / fillet joint with multi-run technique.

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 28 September 2024.  
Issued at Tokyo on 29 September 2023.

  
 Y. Takao  
 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 Filler Rod

Butt Weld		Fillet Weld	
Flat:	2.2mm	Flat:	2.2mm
Horizontal:	2.2mm	Horizontal Vertical:	2.2mm
Overhead:	2.2mm	Horizontal:	2.2mm
Vertical Upward:	2.2mm	Horizontal Overhead:	2.2mm
Vertical Downward:	Not Applicable	Overhead:	2.2mm
		Vertical Upward:	2.2mm
		Vertical Downward:	Not Applicable

Table 2 Chemical Composition of Deposited Metal

C	Si	Mn	P	S	Ni	Cr	Mo
0.04	1.0	0.5	0.04	0.03	11.0	17.0	2.0
max.	max.	~ 2.5	max.	max.	~ 14.0	~ 20.0	~ 3.0

Table 3 Mechanical Properties

Deposited Metal Test			Butt Weld Test
Tensile Test			Tensile test
Tensile strength (N/mm <sup>2</sup> )	Yield point (N/mm <sup>2</sup> )	Elongation (%)	Tensile strength (N/mm <sup>2</sup> )
520min	205 min.	30 min.	480 min.

Table 4 Test Requirements for Annual Inspection

Kind of test	Test assembly <sup>1), 2), 3), 4)</sup>			Kind and number of test specimens to be taken from test assembly
	Number	Plate thickness (mm)	Welding position	
Deposited metal test	1	12 ~ 19	Flat	Tensile test specimen <sup>5), 6)</sup> : 1

Notes:

- 1) The approved specific grade of applicable 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. M6.16, Chapter 6, Part M of the NK Rules.
- 3) Test assembly is to be welded in accordance with 6.7.5, 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., Ibaraki Plant but not exceeding the maximum diameter approved.
- 5) Kind of test specimen is to be U1B specified in Table M3.1, Chapter 3, Part M of the NK Rules.
- 6) Mechanical properties are to comply with the requirements specified in Table 3.



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