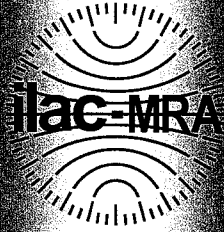




JAB



Testing Laboratory
Accreditation
Certificate

Accreditation No. RTL00020

NIPPON STEEL & SUMIKIN TECHNOLOGY Co., Ltd.
Muroran Unit

12, Nakamachi, Muroran-shi, Hokkaido, 050-0087 Japan

meets the following criteria. On the basis of this, Japan Accreditation Board (JAB) grants accreditation to the said testing laboratory.

Applicable accreditation criteria	: JIS Q 17025:2005 (ISO/IEC 17025:2005)
Scope of accreditation	: Mechanical testing, Chemical testing (As described in the appendix)
Premises covered by accreditation	: As described in the appendix.
Expiry date of accreditation	: September 30, 2021

This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system.

The management system requirements in ISO/IEC 17025:2005 meet the principles of ISO 9001:2008 and are aligned with its pertinent requirements.

Renewed (6)	September 13, 2017
Initial accreditation	September 11, 1997

T. Oda, Chairman
Laboratory Accreditation Committee

Y. Iizuka, President
Japan Accreditation Board

Accreditation No.

RTL00020

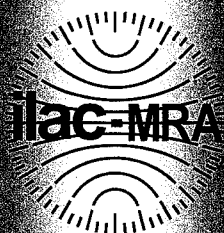
Accreditation Certificate

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Type of Laboratory	Testing Laboratory
Name of Laboratory	NIPPON STEEL & SUMIKIN TECHNOLOGY Co., Ltd. Muroran Unit
Address	12, Nakamachi, Muroran-shi, Hokkaido, 050-0087 Japan

1) Premises on which testing activities are performed

Name of Premises	NIPPON STEEL & SUMIKIN TECHNOLOGY Co.,Ltd. Muroran Unit	
Address of Premises	Postal code	050-0087
	Address	12, Nakamachi, Muroran-shi, Hokkaido, Japan
Testing service at permanent facilities or on site testing service	<input checked="" type="checkbox"/> Testing service at permanent facilities <input type="checkbox"/> On site testing service	

Scope of Accreditation

FIELD	M25 Mechanical Testing
CODE OF CIT*1	M25.A.1.1
NAME OF CIT	Steel, Nonferrous metal

*1 CIT: Classification of Item to be Tested

*2 TCT: Technical Classification of Test

CODE & NAME OF TCT*2	TEST METHOD STANDARD OR STANDARD OPERATING PROCEDURE (SECTION NO. LIMITED OR EXCLUDED)	TEST CONDITION etc.
B2.2.1 Method of measuring case depth hardened by carburizing treatment	JIS G 0561	
B2.1.1 Macroscopic examination by etching	JIS G 0553 6.1 a)	
B2.1.3 Grain size test	JIS G 0551 6.2, 6.3.2, 7.2, annex JA.6, JA.8 ASTM E112 10, A3.2.1.2, A3.2.1.5	
B2.1.4 Microscopic testing for nonmetallic inclusions	JIS G 0555 5, annex 1 ASTM E45 12. Method A, 15.Method D	
B2.1.5 Macro streak flaw test	JIS G 0556 5	
B2.2.2 Measuring decarburized depth test	JIS G 0558 4 a)	

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Type of Laboratory	Testing Laboratory
Name of Laboratory	NIPPON STEEL & SUMIKIN TECHNOLOGY Co., Ltd. Muroran Unit
Address	12, Nakamachi, Muroran-shi, Hokkaido, 050-0087 Japan

CODE & NAME OF TCT ²	TEST METHOD STANDARD OR STANDARD OPERATING PROCEDURE (SECTION NO. LIMITED OR EXCLUDED)	TEST CONDITION etc.
B13.1 Tensile, elongation test	JIS Z 2241	Property: Upper yield point, Proof stress, Tensile strength, Elongation after fracture, Reduction of area Test force up to 2000 kN
B13.3 Bend test, Transverse test	JIS Z 2248 6.1	
B13.4.1 Charpy impact test	JIS Z 2242 (except annex)	Testing temperature : Room temperature (23 °C ± 5 °C) K2 up to 300 J
B13.6.1 Brinell hardness test	JIS Z 2243	Brinell hardness 95.5 HBW 10/3000 to 653 HBW 10/3000 Brinell hardness 95.5 HBW 5/750 to 653 HBW 5/750
B13.6.2 Vickers hardness test	JIS Z 2244	Vickers hardness 100 HV to 500 HV Test force 98.07 N to 196.1 N
B13.6.3 Rockwell hardness test	JIS Z 2245	Rockwell hardness 50 HRB to 100 HRB Rockwell hardness 10 HRC to 60 HRC

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Type of Laboratory	Testing Laboratory
Name of Laboratory	NIPPON STEEL & SUMIKIN TECHNOLOGY Co., Ltd. Muroran Unit
Address	12, Nakamachi, Muroran-shi, Hokkaido, 050-0087 Japan

Scope of Accreditation

FIELD	M26 Chemical Testing
CODE OF CIT*1	M26.A1
NAME OF CIT	Metal:iron and steel

*1 CIT: Classification of Item to be Tested

*2 TCT: Technical Classification of Test

CODE & NAME OF TCT*2	PROPERTIES MEASURED	TEST METHOD STANDARD / STANDARD OPERATING PROCEDURE
B1.2 Volumetric analysis I: Compleximetry	Ni 0.3 % to 30 %	JIS G 1216 4 (2) annex2
B1.2 Volumetric analysis I: redox titration	Cr 0.1 % to 24 %	JIS G 1217 4 a) annex1
B2.1 Molecular absorption spectrometry: Infrared spectrometry	C 0.001 % to 4.65 %	JIS G 1211-3 [except 8.4a), b)]
	S 0.0010 % to 0.50 %	JIS G 1215-4 [except 7.6.1, 7.6.2]
	O 0.0005 % to 0.05%	JIS G 1239 [except 9.2.1, 13.2]
B4.3 Specific thermal conductivity measurement	N 0.0009 % to 0.050 %	JIS G 1228 4 d) annex4
B2.1 Molecular absorption spectrometry: Ultraviolet-visible spectrometry	As 0.005 % to 0.10 %	JIS G 1225 4 a) annex1
	B 0.0001 % to 0.0009 %	JIS G 1227 4 b) annex2
	B 0.0002 % to 0.009 %	JIS G 1227 4 e) annex5
B2.2 Atomic absorption spectrometry: flame atomic absorption spectrometry	Sn 0.002 % to 0.02 %	JIS G 1257-11-1
	Pb 0.01 % to 0.30 %	JIS G 1257-12-1
B2.4 Atomic emission spectrometric: Spark discharge atomic emission spectrometric analysis	※1	JIS G 1253

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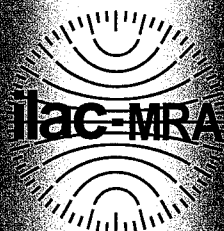
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Type of Laboratory	Testing Laboratory
Name of Laboratory	NIPPON STEEL & SUMIKIN TECHNOLOGY Co., Ltd. Muroran Unit
Address	12, Nakamachi, Muroran-shi, Hokkaido, 050-0087 Japan

CODE & NAME OF TCT*2	PROPERTIES MEASURED	TEST METHOD STANDARD / STANDARD OPERATING PROCEDURE
B2.4 Atomic emission spectrometric: ICP-AES	※2	JIS G 1258-1
	Nb 0.001 % to 0.60 %	JIS G 1258-4
B3.1 X-ray fluorescent analysis	※3	JIS G 1256
(Note)		
※1 : C 0.003 % to 1.2 %, Si 0.002 % to 2.0 %, Mn 0.05 % to 2.4 %, P 0.002 % to 0.4 %, S 0.002 % to 0.4 %, Ni 0.002 % to 5.0 %, Cr 0.002 % to 3.5 %, Mo 0.001 % to 1.5 %, Cu 0.01 % to 1.48 %, V 0.001 % to 0.4 %, Ti 0.001 % to 0.49 %, Al 0.001 % to 0.12 %, As 0.001 % to 0.05 %, Sn 0.001 % to 0.05 %, N 0.004 % to 0.018 %, Nb 0.001 % to 0.22 %		
※2 : Si 0.01 % to 0.60 %, Mn 0.01 % to 2.00 %, P 0.003 % to 0.10 %, Cu 0.01 % to 0.50 %, Ni 0.01 % to 4.00 %, Cr 0.01 % to 3.00 %, Mo 0.01 % to 1.00 %, V 0.002 % to 0.50 %, Al 0.004 % to 0.10 %, Co 0.003 % to 0.20 %, Ti 0.001 % to 0.30 %		
※3 : Si 0.002 % to 2.0 %, Mn 0.05 % to 2.4 %, P 0.002 % to 0.4 %, S 0.08 % to 0.4 %, Ni 0.002 % to 5.0 %, Cr 0.002 % to 3.5 %, Mo 0.001 % to 1.5 %, Cu 0.01 % to 1.48 %, V 0.001 % to 0.4 %, Ti 0.001 % to 0.49 %, As 0.002 % to 0.05 %, Sn 0.002 % to 0.05 %, Nb 0.001 % to 0.22 %		

Japan Accreditation Board