

INSPECTION CERTIFICATE

CERTIFICATE NO. :BYF6275

PAGE : 1/8 DATE : 2020-01-21

CUSTOMER :
ORDER NO. :RFP-201909382(19-MSCT-10-123749)
SHIPPER :SUMITOMO CORPORATION 057 KEN-7240/3 0-845-N3-5-1-FK6F-01
COMMODITY :SEAMLESS HOT FINISHED STEEL TUBING WITH VAM TOP HC
STANDARD :ISO GROUP2 GR.L80-TYPE 1 (2014)
SPECIFICATION :TSP-2368RS, TSP-4283RM, TSP-2369RE
MILL WORK NO. :BYF6275 O.D.:5-1/2inch W.T.:20.00lb/ft LENGTH:MIN.10.97m MAX.12.19m
QUANTITY:42pcs. TOTAL LENGTH:503.55m MASS:14986kg

HEAT NO. :J9L9209 J9LC151 J9LC156
PRODUCTS PCS. :4 27 11

HEAT TREATMENT :QUENCHED & TEMPERED

CHEMICAL COMPOSITION(%)

		*1	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	Ti	B	Al
						*2	*2					*2	*2	*2
SPEC. MIN.		R	-	-	-	-	-	-	80	-	-	-	-	-
MAX.		R	43	45	190	20	10	35	120	25	-	-	2	-
HEAT NO.														
J9L9209		L	25	25	77	7	3	1	96	2	1	31	2	43
		P	23	24	75	6	3	1	96	3	2	27	1	36
		P	23	24	74	6	3	1	95	3	2	28	1	39
J9LC151		L	25	26	78	13	4	2	94	3	1	30	1	29
		P	23	28	76	11	4	2	95	4	2	26	1	35
		P	23	27	75	11	4	2	93	3	2	26	0	30
J9LC156		L	24	24	76	12	4	2	96	3	1	27	1	28
		P	22	25	74	12	4	2	96	3	2	25	1	30
		P	22	24	75	12	4	2	97	3	1	26	0	29

*1 R:LADLE & PRODUCT ANALYSIS L:LADLE ANALYSIS P:PRODUCT ANALYSIS *2:X1000 OTHER:X100

TENSILE TEST

			YS	YS	TS	TS	EL
		*1 *2	*3	*3	*3	*3	%
SPEC. MIN.	HEAT-	L B	M 552	P 80.0	M 655	P 95.0	17
MAX.	LOT NO.	L B	M 655	P 95.0	M -	P -	-
HEAT NO.							
J9L9209	003	L B	M 613	P 88.9	M 721	P 104.6	30
	003	L B	M 609	P 88.3	M 715	P 103.7	30
J9LC151	002	L B	M 604	P 87.6	M 717	P 104.0	30
	002	L B	M 608	P 88.2	M 713	P 103.4	30
	701	L B	M 615	P 89.2	M 728	P 105.6	30
	701	L B	M 622	P 90.2	M 746	P 108.2	28
J9LC156	001	L B	M 615	P 89.2	M 723	P 104.9	30
	001	L B	M 597	P 86.6	M 712	P 103.3	29

TYPE OF SPECIMEN:STRIP 25.4mm(1in.) WIDTH *1 SAMPLING DIRECTION L:LONGITUDINAL *2 SAMPLING POSITION B:BASE METAL
*3 UNIT M:MPa P:ksi GAUGE LENGTH:50.8mm(2.0in.) KIND OF YS:0.5% EXTENSION UNDER LOAD

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE RULES OF THE CONTRACT.



Masayasu Munakata
All documents and certification
reviewed and accepted.
Documents digitally signed on
23/Jan./20 Page 1 of 8



YUJIN ITO

INTERTEK INDUSTRY SERVICES JAPAN LIMITED

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QUALITY ASSURANCE DEPARTMENT

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IMPACT TEST(-10.0°C +14.0°F 2mm V-Notch 10X7.50)

		*1 *2	*3 *4	AVG	*3 *4	AVG
SPEC. MIN.	HEAT-	L B	E J *5 32/48	48	E F *5 24/35	35
MAX.	LOT NO.	L B	E J -/-	-	E F -/-	-
			[1] [2] [3]		[1] [2] [3]	
HEAT NO.						
J9L9209	003	L B	E J 175 181 184 180		E F 129 133 136 133	
J9LC151	002	L B	E J 170 167 175 171		E F 125 123 129 126	
	701	L B	E J 161 184 168 171		E F 119 136 124 126	
J9LC156	001	L B	E J 175 172 168 172		E F 129 127 124 127	
		*1 *2	*3 *4	AVG		
SPEC. MIN.	HEAT-	L B	S % *6 -	-		
MAX.	LOT NO.	L B	S % -	-		
			[1] [2] [3]			
HEAT NO.						
J9L9209	003	L B	S % 100 100 100 100			
J9LC151	002	L B	S % 100 100 100 100			
	701	L B	S % 100 100 100 100			
J9LC156	001	L B	S % 100 100 100 100			

[1] [2] [3]: SPECIMEN NO.
 ABSORBED ENERGY *5:VALUE OF ONE PIECE/EACH VALUE OF TWO PIECES AVG:AVERAGE VALUE OF ONE SET(3 PIECES)
 SHEAR AREA *6:VALUE OF ONE PIECE AVG:AVERAGE VALUE OF ONE SET(3 PIECES)
 *1 SAMPLING DIRECTION L:LONGITUDINAL *2 SAMPLING POSITION B:BASE METAL *3 E:ABSORBED ENERGY S:SHEAR AREA
 *4 UNIT J:Joule F:ft·lbf %:%

VISUAL & DIMENSIONS: ACCEPTABLE

DRIFT TEST: ACCEPTABLE (O.D.:118.19mm SPECIAL LENGTH:1067mm)

HYDROSTATIC TEST 58.0MPa(8400psi)X5sec.: ACCEPTABLE

ULTRASONIC EXAMINATION(PIPE BODY & END AREA): ACCEPTABLE

APPLICABLE STANDARD: ISO11960 SECTION 10.15

REFERENCE STANDARD: L2 EXTERNAL & INTERNAL LONGITUDINAL & TRANSVERSE NOTCH LENGTH 50mm(2.0in.) WIDTH 1mm(0.040in.)

MAGNETIC PARTICLE EXAMINATION(END AREA): ACCEPTABLE

APPLICABLE STANDARD: ISO11960 SECTION 10.15

REFERENCE STANDARD: BRUMAH CASTROL EXTERNAL & INTERNAL LONGITUDINAL & TRANSVERSE

ULTRASONIC EXAMINATION (LAMINATION): HEAT LOT NO. STARTING WITH "7": ACCEPTABLE

REFERENCE STANDARD: 6.4mm(0.25in.) FLAT BOTTOMED ROUND HOLE

ULTRASONIC EXAMINATION (LAMINATION): HEAT LOT NO. STARTING WITH "0": ACCEPTABLE

REFERENCE STANDARD: 5mm(0.20in.) X 50mm(2.0in.)

ELECTRO MAGNETIC EXAMINATION: ACCEPTABLE

APPLICABLE STANDARD: ISO11960 SECTION 10.15

REFERENCE STANDARD: L2 EXTERNAL LONGITUDINAL & TRANSVERSE NOTCH LENGTH 50mm(2.0in.) WIDTH 1mm(0.040in.)

EDDY CURRENT EXAMINATION(END AREA): HEAT LOT NO. STARTING WITH "7": ACCEPTABLE

APPLICABLE STANDARD: ISO11960 SECTION 10.15

REFERENCE STANDARD: L2 EXTERNAL LONGITUDINAL & TRANSVERSE NOTCH LENGTH 50mm(2.0in.) WIDTH 1mm(0.040in.)

ULTRASONIC WALL THICKNESS CHECK: ACCEPTABLE

THREAD GAUGING: ACCEPTABLE

EQUINOR MATERIAL NO.

517333

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE RULES OF THE CONTRACT.



YUJIN ITO

INTERTEK INDUSTRY SERVICES JAPAN LIMITED

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NO.153415K20



NIPPON STEEL CORPORATION
WAKAYAMA WORKS [KAINAN AREA]
260-100, FUNOO, KAINAN, JAPAN

INSPECTION CERTIFICATE

CERTIFICATE NO. :BYF6275

PAGE : 3/8 DATE : 2020-01-21

TRO048VER.7
EN 10204 3.1

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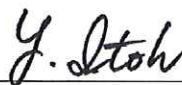
CERTIFICATE NO. :BYF6275

PAGE : 4/8 DATE :2020-01-21

HARDNESS TEST(HRC)

		*1*2 *3	*4 *5	*V.A.
SPEC. MIN.		B C	- 14.0	-
MAX.		B C	- 23.0	-
HEAT NO.	HEAT- LOT NO.		AVG. QUAD IMPRESSION NO. OUTER WALL -RANT (1) (2) (3) AVG. INNER WALL IMPRESSION NO. (1) (2) (3) AVG.	
J9L9209	003	B C T	18.9 A 18.8 18.8 19.4 19.0 18.1 18.9 19.2 18.7	0.3
	003	B C B	18.7 A 18.8 19.0 18.5 18.8 18.5 18.8 18.7 18.7	0.1
J9LC151	002	B C T	18.7 A 19.0 18.8 19.1 19.0 18.6 18.0 18.5 18.4	0.6
	002	B C B	18.4 A 18.9 18.7 18.9 18.8 17.5 18.0 18.2 17.9	0.9
	701	B C T	19.1 A 19.0 18.6 19.1 18.9 19.6 19.4 19.0 19.3	0.4
	701	B C B	19.6 A 18.9 19.5 19.9 19.4 20.2 19.7 19.4 19.8	0.4
J9LC156	001	B C T	18.8 A 18.7 18.7 18.8 18.7 18.8 18.7 19.1 18.9	0.2
	001	B C B	18.2 A 18.0 18.2 18.1 18.1 18.2 18.1 18.6 18.3	0.2
		*ALL	18.8	
*1 SAMPLING POSITION B:BASE METAL *2 LOCATION C:CROSS SECTION *3 SAMPLING LOCATION T:TOP B:BOTTOM *4 EACH				
*5 AVERAGE *V.A.:VARIATION AVERAGE MAX.-MIN. * ALL:ALL AVG.				

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TEMPERING TEMPERATURE

HEAT NO.	PRODUCT PCS. (PCS.)	HEAT LOT/NO.	SETTING TEMPERING TEMPERATURE (°C)
J9L9209	4	003	685
J9LC151	26	002	685
J9LC151	1	701	685
J9LC156	11	001	685
TOTAL	42		
REMARKS : TEMPERING TEMPERATURE CONTROL RANGE : SETTING TEMPERATURE +,-10°C			

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**NIPPON STEEL**NIPPON STEEL CORPORATION
WAKAYAMA WORKS [KAINAN AREA]
260-100, FUNOO, KAINAN, JAPAN**INSPECTION CERTIFICATE(COUPLING)**

CERTIFICATE NO. :BYFF6275

PAGE : 6 / 8 DATE :2020-01-21

MATERIAL WORK NO.:BCFF0161

HEAT TREATMENT:QUENCHED & TEMPERED

CHEMICAL COMPOSITION(%)

		*1	C	Si	Mn	P	S	Cu	Cr	Ni	Mo	Ti	B	Al
			*2		*2		*2		*2		*2		*2	
SPEC. MIN.		R	-	-	-	-	-	-	80	-	-	-	-	-
MAX.		R	43	45	190	20	10	35	120	25	-	-	2	-
HEAT NO.		L	25	23	77	15	5	1	97	2	1	30	2	35
J9LA985		P	24	23	75	15	5	1	97	2	2	27	1	30
		P	24	23	75	15	5	1	98	2	2	27	1	28

*1 R:LADLE & PRODUCT ANALYSIS L:LADLE ANALYSIS P:PRODUCT ANALYSIS *2:X1000 OTHER:X100

TENSILE TEST

TENSILE TEST											
		*1 *2	YS		YS		TS		TS		EL
			*3		*3		*3		*3		%
SPEC. MIN. MAX.	PIPE NO.	L B	M	552	P	80.0	M	655	P	95.0	15
		L B	M	655	P	95.0	M	-	P	-	-
HEAT NO. J9LA985		L B	M	608	P	88.2	M	733	P	106.3	28
	1	L B	M	603	P	87.5	M	730	P	105.9	28
	3	L B	M	603	P	87.5	M	730	P	105.9	28

TYPE OF SPECIMEN:ROUND BAR 12.7mm(0.5in.) DIAMETER *1 SAMPLING DIRECTION L:LONGITUDINAL

*2 SAMPLING POSITION B:BASE METAL *3 UNIT M:MPa P:ksi GAUGE LENGTH:50.8mm(2.0in.)

KIND OF YS:0.5% EXTENSION UNDER LOAD

IMPACT TEST(-10.0°C +14.0°F 2mm V-Notch 10X10)

		*1 *2	*3 *4	AVG				*3 *4	AVG			
SPEC. MIN. MAX.	PIPE NO.	T B	E J	*5	40/60	60		E F	*5	30/44	44	
		T B	E J		-/-	-		E F		-/-	-	
				[1]	[2]	[3]			[1]	[2]	[3]	
HEAT NO. J9LA985	1	T B	E J	127	137	136	133	E F	94	101	100	98
		*1 *2	*3 *4	AVG								
SPEC. MIN. MAX.	PIPE NO.	T B	S %	*6	-	-	-					
		T B	S %		-	-	-					
				[1]	[2]	[3]						
HEAT NO. J9LA985	1	T B	S %	91	87	84	87					

[1] [2] [3]: SPECIMEN NO.

ABSORBED ENERGY *5:VALUE OF ONE PIECE/EACH VALUE OF TWO PIECES AVG:AVERAGE VALUE OF ONE SET(3 PIECES)

SHEAR AREA *6:VALUE OF ONE PIECE AVG:AVERAGE VALUE OF ONE SET(3 PIECES)

*1 SAMPLING DIRECTION T:TRANSVERSE *2 SAMPLING POSITION B:BASE METAL *3 E:ABSORBED ENERGY S:SHEAR AREA

*4 UNIT J:Joule F:ft•lbf %:%

VISUAL & DIMENSIONS: ACCEPTABLE

WE HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE IN ACCORDANCE WITH THE RULES OF THE CONTRACT.

Y. Itoh

YUJIN ITO

INTERTEK INDUSTRY SERVICES JAPAN LIMITED

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260-100, FUNOO, KAINAN, JAPAN

INSPECTION CERTIFICATE(COUPILING)

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PAGE : 7/8 DATE :2020-01-21

MAGNETIC PARTICLE EXAMINATION: ACCEPTABLE

APPLICABLE STANDARD: ISO11960 SECTION 9.12

REFERENCE STANDARD: JIS Z 2320 TYPE A1 EXTERNAL & INTERNAL LONGITUDINAL & TRANSVERSE

THREAD GAUGING: ACCEPTABLE

EN 10204 3.1

TEST HEAT LOT

HEAT NO.	HEAT LOT NO.	PIPE NO.
J9LA985	001	1-3

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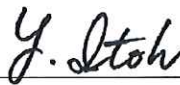
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HARDNESS TEST(HRC)

		*1*2 *3	*4 *5	*V.A.
SPEC. MIN.		B C	- 14.0	-
MAX.		B C	- 23.0	-
HEAT NO.	PIPE NO.		AVG. QUAD IMPRESSION NO. OUTER WALL -RANT (1) (2) (3) AVG. (1) (2) (3) AVG. MID WALL IMPRESSION NO. (1) (2) (3) AVG. INNER WALL IMPRESSION NO. (1) (2) (3) AVG.	
J9LA985	1	B C T	18.9 A 19.0 19.1 19.0 19.0 18.5 19.1 19.1 18.9 18.7 18.9 18.7 18.8 0.2	
	3	B C B	18.4 A 18.1 18.1 18.1 18.1 18.3 18.4 18.3 18.3 18.5 18.6 18.9 18.7 0.6	
		*ALL	18.6	
*1 SAMPLING POSITION B:BASE METAL *2 LOCATION C:CROSS SECTION *3 SAMPLING LOCATION T:TOP B:BOTTOM *4 EACH *5 AVERAGE *V.A.:VARIATION AVERAGE MAX.-MIN. * ALL:ALL AVG.				

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