

INSPECTION CERTIFICATE

It is hereby certified that the above results are true and correct in every detail.

Chita Plant.

Chief of Quality Assurance Section



Daido Steel Co. Ltd.

R. Oguni

Messrs; OKAYA & CO., LTD.

Date ; AUG., 20, 2019

Packing List No; 8-0459 (6EW537)

Contract No; KZ34958

Customer No;

Condition; HOT ROLLED

(AD960031-00 01)

Quantity	NO		Type of Steel		Heat No.	Size(MM)	Length()	P'cs	Weight (LBS)	Body Hardness ()
		A101- A121	A201- A215	SAE52100/SUJ2	"	7868F	DIA 5.5	IN COIL	21	92,271
	A501- A503		"	"	7868F	"	"	15	65,932	
			"	"	6K17F	"	"	3	13,223	
						TOTAL		39 BUNDLES	39	171,426

Items	Chemical Composition														Decarburization	Grain Size	Hardenability (HRC)		
	C	SI	MN	P	S	CU	NI	CR	MO	O	AL	TI							
Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%		
Heat No.	98	15	25	MAX	MAX	MAX	MAX	135	MAX	MAX	1	MAX							
Speci- fication	-105	-35	-45	20	10	20	20	-160	8	12	-5	30							
7868F	102	26	35	13	7	14	7	142	4	5	4	8							
6K17F	100	27	36	14	6	14	7	142	4	5	4	19							

Heat No.	Hardenability (End Quenching Method.)										Non Metallic Inclusion									
											ASTM					ASTM				
	AT	AH	BT	BH	CT	CH	DT	DH	SAMB	SAMD										
7868F	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0										
6K17F	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0										

Items	Mechanical Properties (Type of Specimen)							Heat Treatment
	Yield	Point Strength	Tensile Strength	Elon- gation	Reduction of Area	Hardness	Impact Value	
Unit				%	%	HB		
Heat No.								
Speci- fication								
7868F								
6K17F								

Heat No.	Items	Macro structure	Streak Flaw	Micro structure	Upsetting Test	Ultrasonic Test	Size Tolerance (MM)
7868F		GOOD	GOOD				
6K17F		GOOD	GOOD				

APPEARANCE
INSPECTION
GOOD
GOOD

MACRO CLEANLINESS PER AMS2301 : GOOD
SURFACE DEFECT : GOOD

Remarks

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Messrs; OKAYA & CO., LTD.

Date ; AUG., 20, 2019

Packing List No; 8-0460 (6EW538)

Contract No; KZ34958

Customer No;

Condition; HOT ROLLED

(AD960031-00 02)

Quantity	NO	Type of Steel	Heat No.	Size (MM)	Length ()	P'cs	Weight (LBS)	Body Hardnes ()
		B101- B102	SAE52100/SUJ2	6K17F	DIA 11	IN COIL	2	8,960
	B201- B212	"	6C88E	"	"	12	53,459	
	B301- B312	"	6K17F	"	"	12	53,699	
	B401- B424	"	6C88E	"	"	24	106,819	
				TOTAL	50 BUNDLES	50	222,937	

Items	Chemical Composition														Decarburization	Grain Size	Hardenability (HRC)			
	C	SI	MN	P	S	CU	NI	CR	MO	O	AL	TI								
Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%				
Heat No. Specification	98	15	25	MAX	MAX	MAX	MAX	135	MAX	MAX	1	MAX						ASTM E112	830 °C	
6K17F	100	27	36	20	10	20	20	-160	8	12	-5	30							8.8	64
6C88E	99	26	36	16	6	16	8	144	4	5	4	19							8.8	65

Heat No.	Hardenability (End Quenching Method.)										Non Metallic Inclusion									
											ASTM									
	AT	AH	BT	BH	CT	CH	DT	DH	SAMB	SAMD										
6K17F	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0										
6C88E	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0										

Items	Mechanical Properties (Type of Specimen)							Heat Treatment
	Yield Strength	Tensile Strength	Elongation %	Reduction of Area %	Hardness HB	Impact Value		
Heat No. Specification								
6K17F								
6C88E								

APPEARANCE INSPECTION
GOOD
GOOD

Heat No.	Macro structure	Streak Flaw	Micro structure	Upsetting Test	Ultrasonic Test	Size Tolerance (MM)
6K17F	GOOD	GOOD				
6C88E	GOOD	GOOD				

MACRO CLEANLINESS PER AMS2301 : GOOD
SURFACE DEFECT : GOOD

Remarks

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Messrs; OKAYA & CO., LTD.

Date ; AUG., 27, 2019

Packing List No; 8-0658 (6EE053)

Contract No; OT-US16163
(SB965137-00 02)

Customer No;

Condition; HOT ROLLED

Quantity	NO		Type of Steel		Heat No.		Size(MM)		Length()		P'cs		Weight (LBS)		Body Hardness ()					
		B401- B412	B501- B502	SUJ2	"	7844F	7450E	DIA 10	"	IN COIL	"	12	2	53,992	8,986					
							TOTAL		14 BUNDLES		14		62,978							
Items	Chemical Composition													Decarburization	Grain Size	Hardenability °C				
	Unit	C	SI	MN	P	S	CU	NI	CR	MO	O	AL	TI							
Heat No.	Speci- fication	95	15	MAX	MAX	MAX	MAX	MAX	130	MAX	MAX									
7844F		-110	-35	50	25	8	15	20	-160	8	10									
7450E		101	23	28	14	6	11	7	142	6	5	33	12							
Heat No.	Hardenability (End Quenching Method.)								Non Metallic Inclusion											
									ASTM				JIS							
7844F									AT	AH	BT	BH	CT	CH	DT	DH	D	DA	DB	DC
7450E									0.5	0.5	0.0	0.0	0.0	0.0	1.0	0.0	.008	.008	.000	.000
									0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	.004	.004	.000	.000
Items	Mechanical Properties (Type of Specimen)							Heat Treatment												
	Yield	Point Strength	Tensile Strength	Elongation %	Reduction of Area %	Hardness HB	Impact Value													
Heat No.	Speci- fication																			
Heat No.	Items	Macro structure	Streak Flaw	Micro structure	Upsetting Test	Ultrasonic Test	Size Tolerance (MM)													
		7844F	GOOD																	
7450E		GOOD																		

Remarks

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Daido Steel Co. Ltd.

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Messrs; OKAYA & CO.,LTD.

Date ; AUG., 27, 2019

Packing List No; 8-0659 (7EE010)

Contract No; OT-US16165

Customer No; _____

Condition; HOT ROLLED

(SB975104-00 01)

Quantity	NO		Type of Steel		Heat No.		Size(MM)		Length()		P'cs		Weight (LBS)		Body Hardness ()							
	A101- A109		SUJ2		7539F		DIA 8.3		IN COIL		9		39,675									
TOTAL										9 BUNDLES		9		39,675								
Chemical Composition													Decarburization	Grain Size	Hardenability °C							
Items	C	SI	MN	P	S	CU	NI	CR	MO	O	AL	TI										
Unit	%	%	%	%	%	%	%	%	%	%	%	%				%	%	%	%			
Heat No. Specification	95	15	MAX	MAX	MAX	MAX	MAX	130	MAX	MAX												
7539F	-110	-35	50	25	8	15	20	-160	8	10												
	101	24	32	10	6	11	8	142	4	4	35	11										
Heat No.	Hardenability (End Quenching Method.)										Non Metallic Inclusion											
											ASTM					JIS						
											AT	AH	BT	BH	CT	CH	DT	DH	D	DA	DB	DC
7539F											0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	.008	.008	.000	.000
Mechanical Properties (Type of Specimen)																						
Items	Yield	Point Strength	Tensile Strength	Elon- gation	Reduction of Area	Hardness	Impact Value	Heat Treatment														
Unit				%	%	HB																
Heat No. Specification																						
Heat No.	Items	Macro structure	Streak Flaw		Micro structure	Upsetting Test	Ultrasonic Test	Size Tolerance (MM)														
	7539F	GOOD																				
Remarks																						

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Messrs; OKAYA & CO., LTD.

Date ; AUG., 27, 2019

Packing List No; 8-0660-1 (7EE011)

Contract No; OT-US16165
(SB975104-00 02)

Customer No; _____

Condition; HOT ROLLED

Quantity	NO	Type of Steel	Heat No.	Size()	Length()	P'cs	Weight ()	Body Hardness ()																																																																																																																																																																	
	<table border="1"> <thead> <tr> <th rowspan="2">Items</th> <th colspan="12">Chemical Composition</th> <th rowspan="2">Decarburization</th> <th rowspan="2">Grain Size</th> <th rowspan="2">Hardenability °C</th> </tr> <tr> <th>C</th> <th>SI</th> <th>MN</th> <th>P</th> <th>S</th> <th>CU</th> <th>NI</th> <th>CR</th> <th>MO</th> <th>O</th> <th>AL</th> <th>TI</th> </tr> </thead> <tbody> <tr> <td>Unit</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> <td>%</td> </tr> <tr> <td>Heat No.</td> <td>95</td> <td>15</td> <td>MAX</td> <td>MAX</td> <td>MAX</td> <td>MAX</td> <td>MAX</td> <td>130</td> <td>MAX</td> <td>MAX</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Speci- fication</td> <td>-110</td> <td>-35</td> <td>50</td> <td>25</td> <td>8</td> <td>15</td> <td>20</td> <td>-160</td> <td>8</td> <td>10</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7541F</td> <td>100</td> <td>25</td> <td>31</td> <td>13</td> <td>6</td> <td>11</td> <td>6</td> <td>141</td> <td>5</td> <td>7</td> <td>38</td> <td>13</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7847F</td> <td>100</td> <td>21</td> <td>30</td> <td>16</td> <td>6</td> <td>10</td> <td>7</td> <td>143</td> <td>4</td> <td>6</td> <td>33</td> <td>13</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7092E</td> <td>101</td> <td>24</td> <td>31</td> <td>13</td> <td>6</td> <td>10</td> <td>5</td> <td>142</td> <td>3</td> <td>4</td> <td>33</td> <td>12</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>7441E</td> <td>99</td> <td>25</td> <td>29</td> <td>13</td> <td>6</td> <td>10</td> <td>6</td> <td>143</td> <td>4</td> <td>6</td> <td>35</td> <td>15</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>									Items	Chemical Composition												Decarburization	Grain Size	Hardenability °C	C	SI	MN	P	S	CU	NI	CR	MO	O	AL	TI	Unit	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	Heat No.	95	15	MAX	MAX	MAX	MAX	MAX	130	MAX	MAX									Speci- fication	-110	-35	50	25	8	15	20	-160	8	10									7541F	100	25	31	13	6	11	6	141	5	7	38	13							7847F	100	21	30	16	6	10	7	143	4	6	33	13							7092E	101	24	31	13	6	10	5	142	3	4	33	12							7441E	99	25	29	13	6	10	6	143	4	6	35	15					
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Messrs; OKAYA & CO., LTD.

Date ; AUG., 27, 2019

Packing List No; 8-0660-2(7EE011)

Contract No; OT-US16165

Customer No; _____

Condition; HOT ROLLED

(SB975104-00 02)

Quantity	NO	Type of Steel	Heat No.	Size()	Length()	P'cs	Weight ()	Body Hardness ()																																																																																																																																																							
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7540F									0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.0	.000	.000	.000	.000																																																																																																																																											
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7540F	GOOD																																																																																																																																																														
7844F	GOOD																																																																																																																																																														

Remarks



Daido Steel Co. Ltd.

CHITA PLANT JAPAN

Messrs; OKAYA & CO.,LTD.

No. 8-0660(7EE011)

Contract No; OT-US16165
(SB975104-00 02)

Condition; HOT ROLLED

Date; AUG.,27,2019

Quantity							Body Hardness
No.	Type of Steel	Heat No.	Size(MM)	Length()	P' cs	Weight(LBS)	()
B101- B105	SUJ2	7541F	DIA 9.5	IN COIL	5	21,950	
B201- B203	"	7847F	"	"	3	13,440	
B301	"	7092E	"	"	1	4,462	
B401- B406	"	7441E	"	"	6	26,728	
B501- B509	"	7847F	"	"	9	41,145	
B601- B606	"	7450E	"	"	6	26,667	
B701- B704	"	7539F	"	"	4	17,743	
B801- B806	"	7441E	"	"	6	26,896	
B901- B905	"	7540F	"	"	5	22,585	
BA01- BA03	"	7844F	"	"	3	13,470	
			TOTAL	48 BUNDLES	48	215,086	

Chief of Quality Assurance Section

R. Oguni