KRAKATAU POSCO

Mill Test Certificate

Certificate No. : 221024-FPQ8IS-0015A4-0002
Date of Issue : Nov., 01, 2022

Order No. : Q8S1028130
PO No. : ST1Z220929
Supplier :
Commodity : CARBON STEEL PLATE
Customer : ZIMMER STAAL BV
Spec & Type : EN10025-2 S355J2+N

Size	Product No.	Quantity	Weight (kg)	Heat No.	Position	Tensile Test YP (MPa)	Tensile Test TS	Tensile Test EL (%)	Impact Test V Notch -20 ℃ Energy (Joule)	U.S.T		Division	Chemical Composition C (%)	Si (%)	Mn (%)	P (%)	S (%)	Cr (%)	Ni (%)	B (ppm)	Cu (%)	Mo (%)	N (ppm)	Nb (%)	Ti (%)
10x2500x12000	PK02775301-5303	3	7,065	SK84783	T	450	567	29	1: 174	Good		L	0.1610	0.210	1.534	0.0113	0.0029	0.012	0.004	3	0.007	0.001	40	0.029	0.0131
									2: 159			P	0.1584	0.206	1.536	0.0112	0.0029	0.012	0.005	2	0.007	0.001	39	0.029	0.0124
									3: 144																
									A: 159																
10x2500x12000	PK02775401-5403	3	7,065	SK84783	T	450	567	29	1: 174	Good		L	0.1610	0.210	1.534	0.0113	0.0029	0.012	0.004	3	0.007	0.001	40	0.029	0.0131
									2: 159			P	0.1584	0.206	1.536	0.0112	0.0029	0.012	0.005	2	0.007	0.001	39	0.029	0.0124
									3: 144																
									A: 159																
10x2500x12000	PK02776701-6703	3	7,065	SK84783	T	450	567	29	1: 174	Good		L	0.1610	0.210	1.534	0.0113	0.0029	0.012	0.004	3	0.007	0.001	40	0.029	0.0131
									2: 159			P	0.1584	0.206	1.536	0.0112	0.0029	0.012	0.005	2	0.007	0.001	39	0.029	0.0124
									3: 144																
									A: 159																
10x2500x12000	PK02773501-3503	3	7,065	SK84783	T	455	577	30	1: 142	Good		L	0.1610	0.210	1.534	0.0113	0.0029	0.012	0.004	3	0.007	0.001	40	0.029	0.0131
									2: 171			P	0.1584	0.206	1.536	0.0112	0.0029	0.012	0.005	2	0.007	0.001	39	0.029	0.0124
									3: 142																
									A: 152																
10x2500x12000	PK02775101-5103	3	7,065	SK84783	T	455	577	30	1: 142	Good		L	0.1610	0.210	1.534	0.0113	0.0029	0.012	0.004	3	0.007	0.001	40	0.029	0.0131
									2: 171			P	0.1584	0.206	1.536	0.0112	0.0029	0.012	0.005	2	0.007	0.001	39	0.029	0.0124
									3: 142																
									A: 152																
10x2500x12000	PK02773601-3603	3	7,065	SK84784	T	437	563	31	1: 173	Good		L	0.1645	0.204	1.535	0.0112	0.0030	0.012	0.004	3	0.007	0.001	40	0.029	0.0125
									2: 160			P	0.1560	0.200	1.558	0.0138	0.0046	0.009	0.005	2	0.007	0.001	33	0.030	0.0115
									3: 136																
									A: 156																
10x2500x12000	PK02773701-3703	3	7,065	SK84784	T	437	563	31	1: 173	Good		L	0.1645	0.204	1.535	0.0112	0.0030	0.012	0.004	3	0.007	0.001	40	0.029	0.0125
									2: 160			P	0.1560	0.200	1.558	0.0138	0.0046	0.009	0.005	2	0.007	0.001	33	0.030	0.0115
									3: 136																
									A: 156																

* Position - T : Top, M : Middle, B : Bottom
* Tensile Test. Direction : Transversal, Gauge Length : 5.65 $\sqrt{A_o}$ (Rectangular), YP Method : Upper Point
* Impact Test. Direction : Surface Longitudinal, Sub-Size : 10 ㎜X7.5 ㎜
* U.S.T : Ultrasonic Test.
* Division - L : Ladle Analysis, P : Products Analysis
* Supply Condition : As-Rolled unless otherwise Heat Treated.

This material has been fully killed and made by basic oxygen process. This material is fine grained steel.
This material has been made by vacuum degassing process.
No repair welding was performed to the products. Test Certificate is issued according to ISO 10474/EN 10204 3.1.
We hereby certify that the material herein has been made in accordance with PED2014/68/EU and AD2000-W0 / AD2000-W1:2006 (Certificate No. 01 202 ROK/Q-16 0081).
Thickness tolerance according to EN 10029 –Class B
Flatness tolerance according to EN 10029 - Class N
Surface according to EN 10163-2 Class B Subclass 3

Legal sanction can be imposed on forging. Improper use of product can cause safety issues.

CE 14 0035-CPR-A258

Surveyor To :

KP001 Choi Jong Seog

PT.KRAKATAU POSCO Jl. Afrika, No. 2, Kawasan Industri Krakatau Cilegon, Banten, 42443, Indonesia

Testing and Inspection Team Leader CHOI JONG-SEOG

KRAKATAU POSCO

Mill Test Certificate

Certificate No. : 221024-FPQ8IS-0015A4-0002
Date of Issue : Nov., 01, 2022

Order No. : Q8S1028130
PO No. : ST1Z220929
Supplier :
Commodity : CARBON STEEL PLATE
Customer : ZIMMER STAAL BV
Spec & Type : EN10025-2 S355J2+N

Product No.	Division	V (%)	Sol-Al (%)	Total-Al (%)	CEQ (%)
PK02775301-5303	L	0.005	0.044	0.046	0.42
	P	0.005	0.044	0.045	
PK02775401-5403	L	0.005	0.044	0.046	0.42
	P	0.005	0.044	0.045	
PK02776701-6703	L	0.005	0.044	0.046	0.42
	P	0.005	0.044	0.045	
PK02773501-3503	L	0.005	0.044	0.046	0.42
	P	0.005	0.044	0.045	
PK02775101-5103	L	0.005	0.044	0.046	0.42
	P	0.005	0.044	0.045	
PK02773601-3603	L	0.003	0.039	0.043	0.42
	P	0.003	0.040	0.042	
PK02773701-3703	L	0.003	0.039	0.043	0.42
	P	0.003	0.040	0.042	

This material has been fully killed and made by basic oxygen process. This material is fine grained steel.
This material has been made by vacuum degassing process.
No repair welding was performed to the products. Test Certificate is issued according to ISO 10474/EN 10204 3.1.
We hereby certify that the material herein has been made in accordance with PED2014/68/EU
and AD2000-W0 / AD2000-W1:2006 (Certificate No. 01 202 ROK/Q-16 0081).
Thickness tolerance according to EN 10029 –Class B
Flatness tolerance according to EN 10029 - Class N
Surface according to EN 10163-2 Class B Subclass 3

Legal sanction can be imposed on forging. Improper use of product can cause safety issues.

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Testing and Inspection Team Leader CHOI JONG-SEOG

KRAKATAU POSCO

Ultrasonic Test Report

Certificate No. : 221024-FPQ8IS-0015A4-0002
Date of Issue : Nov., 01, 2022

Order No. : Q8S1028130
PO No. : ST1Z220929
Supplier :
Commodity : CARBON STEEL PLATE
Customer : ZIMMER STAAL BV
Spec & Type : EN10025-2 S355J2+N

Product No.	Ultrasonic Test						Remarks
	Examination Method	Apparatus	Transducer	Frequency (MHz)	Sensitivity	Test Result	
PK02775301-5303	2	1	1	5	H	1	1. Application Spec. : EN10160(1999) S1/E1 2. We hereby certity that the material described herein has been examined in accordance with above ultrasonic specification and fully conformed thereto.
PK02775401-5403	2	1	1	5	H	1	
PK02776701-6703	2	1	1	5	H	1	
PK02773501-3503	2	1	1	5	H	1	
PK02775101-5103	2	1	1	5	H	1	
PK02773601-3603	2	1	1	5	H	1	
PK02773701-3703	2	1	1	5	H	1	

* Couplant : Water
* Examination method(1:Direct straight Beam, 2:Direct double beam, 3:Others)
* Apparatus(1 : Digital Flaw Detector, 2: Others)
* Transducer(1: ¢ 20 ㎜, 2: ¢ 24 ㎜, 3: ¢ 25 ㎜ or 25 ㎜ square, 4: ¢ 30 ㎜, 5:8~12.5 ㎜, 9:others)
* Sensitivity(A:RB-D-1_0=50 %+10DB, B:STB-N_1=50 %, C:STB-N_1=70 %, D:STB-G.$V_{1.5\text{-}4.0}$=50 %, E:STB-G.$V_{1.5\text{-}4.0}$=80 %, F:STB-G.$V_{1.5\text{-}2.8}$=50 %, G:BG=75±5 %, H: ¢ 5.0 ㎜DAC, I: ¢ 11.0 ㎜DAC, J: ¢ 8.0 ㎜DAC, K:GB-T2970 Sensitivity, L:B_G=100 %, M: ¢ 5.0 ㎜FBH=60 %, N:Soviet 75ATM Sens., O:BS5996-93 Sens, P: ¢ 6.0 ㎜DAC, X:Others)
* Test Result (1: Good, 2: Acceptable)

This material has been fully killed and made by basic oxygen process. This material is fine grained steel.
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We hereby certify that the material herein has been made in accordance with PED2014/68/EU and AD2000-W0 / AD2000-W1:2006 (Certificate No. 01 202 ROK/Q-16 0081).
Thickness tolerance according to EN 10029 –Class B
Flatness tolerance according to EN 10029 - Class N
Surface according to EN 10163-2 Class B Subclass 3

Legal sanction can be imposed on forging. Improper use of product can cause safety issues.

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Testing and Inspection Team Leader CHOI JONG-SEOG