MILL'S QUALITY CERTIFICATES

SeAH Steel Corp.
(주)세 아 제 강

HEAD OFFICE ; BONGNAE-DONG 1GA, JUNG-GU, SEOUL, KOREA
POHANG PLANT ; 14-1, JANGHEUNG-DONG, NAM-GU, POHANG

증명서번호 / CERTIFICATE NO. : E201204-0147-000948(5007927)
제 품 명 / COMMODITY : H.F.W STEEL PIPE
제 품 규 격 / SPECIFICATION : API 5LB PSL1/ASTM A53B(2007)

발 급 일 자 / DATE OF ISSUE : 2012.03.30
계 약 서 번 호 / L/C No. (P/O No.) : 1103096734
수 요 가 / CUSTOMER : PLESA
주 문 자 / SHIPPER : DUFERCO SA

NO.	HEAT NO. (BATCH NO.)	관 단 TYPE *1	주 문 치 수 ORDER SIZE	수 량 QUANTITY 본 수 PCS	총 길 이 TOTAL LENGTH	중량(M/T) WEIGHT	비 고 REMARK
1	5-77159 (SHM3152120)	BBE	10 " X SCH40 X 6.120 M	146	893.520 M	54.058	
2	2-6966 (SIM3031050)	BBE	12 " X SCH40 X 6.120 M	45	275.400 M	21.936	
3	2-5814 (SIM3031060)	BBE	12 " X SCH40 X 6.120 M	48	293.760 M	23.398	
4	SP27555 (SIM3142040)	BBE	14 " X 0.250 " X 6.120 M	60	367.200 M	20.236	

ORIGINAL

NO.	HEAT NO (BATCH NO.)	HYDROSTATIC TEST 5 Sec. psi	RESULT	N·D·T U *2	VISUAL & DIMENSION	FLATTENING	SHOCK	COMPRESSION	RESIDUAL MAGNETISM GAUSS	BENDING *3	DRIFT	CRUSH	FLARING	FLANGE	REVERSE FLATTENING	ZINC COATING TEST WEIGHT OF ZINC COAT-ING	균일성 C.S *4	알칼리 ALK *5
기준 SPEC									30									
1	5-77159 (SHM3152120)	1450	G	G	G	G			G									
2	2-6966 (SIM3031050)	1360	G	G	G	G			G									
3	2-5814 (SIM3031060)	1360	G	G	G	G			G									
4	SP27555 (SIM3142040)	770	G	G	G	G			G									

NO.	HEAT NO (BATCH NO.)	DESIG *6	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti		CEQ *8	DIR *9	TENSILE STRENGTH psi	YIELD STRENGTH psi	E.L % *10	IMPACT TEST (℃) ENERGY Joule	SHEAR AREA %	HARDNESS TEST HRB	HEAT TREATMENT SN *11
			CHEMICAL COMPOSITION(%)															TENSILE TEST (Gage Length : 50mm)			IMPACT TEST (℃)			
				2		3		2	2	2	2	3	3	3										
						*7																		
기준 SPEC		MAX	26		120	30	30	40	40	40	15	80											99	
		MIN																60200	35500					
1	5-77159 (SHM3152120)	H	16	16	42	18	4																	
		P	15	15	42	16	4	1	1	1	TR	2	1	1			T	66710	51480	39			83	G
		P	16	17	43	17	5	1	1	2	TR	2	1	1			W	77880						
2	2-6966 (SIM3031050)	H	16	17	47	24	4																	
		P	16	16	48	25	5	1	2	2	TR	2	1	2			T	70050	50180	39			84	G
		P	17	16	47	24	4	1	2	2	TR	2	1	2			W	75420						
3	2-5814 (SIM3031060)	H	16	18	44	15	5																	
		P	16	18	45	17	4	1	1	1	TR	1	2	2			T	70340	50180	40			83	G
		P	17	17	45	14	4	1	1	2	TR	1	2	2			W	74110						
4	SP27555 (SIM3142040)	H	15	1	67	8	5																	
		P	14	1	66	8	5	1	1	1	TR	1	2	1			T	69610	49160	34			84	G
		P	15	1	68	8	5	1	1	1	TR	1	2	1			W	75130						

NOTE *1 ~ *11: Refer To Others

OTHERS
*1-BBE:Black Beveled End(30°)
*2-U:Weld Seam Ultrasonic Test
*6-H:Heat(Ladle) Analysis, P:Product Analysis *7-2:X100, 3:X1000
*9-T:Base Metal Transverse, W:Weld Part Transverse *10-E.L:Elongation *11-S.N:Seam Normalizing *G:GOOD *Tr:Trace

* THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.1 (ISO 10474 3.1.B)

Surveyor :

· WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH ABOVE SPECIFICATION AND THE RESULTS OF ALL TEST ARE ACCEPTABLE.
· THE USE OF THE MATERIAL OUTSIDE THE SPECIFICATIONS INDICATED ON THIS CERTIFICATE MAY CAUSE SAFETY AND/OR MONETARY PROBLEMS. FURTHERMORE, ANY ORGANIZATION OR PERSON(S) WHO DELIBERATELY MODIFIES THE CERTIFICATE WILL BE PROSECUTED FOR FORGING AN OFFICIAL DOCUMENT (ACCORDING TO THE PROVISIONS OF THE CRIMINAL CODE 231)

Manager of Q.M Dept.

N. J. Baek

(주식회사세아제강 SeAH 품질경영실장)

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NO.	HEAT NO. (BATCH NO.)	관 단 TYPE *1	주 문 치 수 ORDER SIZE	수 량 QUANTITY 본 수 PCS	총 길 이 TOTAL LENGTH	중량(M/T) WEIGHT	비 고 REMARK
5	SQ66667 (SIM3191150)	BBE	16 " X 0.375 " X 6.120 M	32	195.840 M	18.209	
6	KA7675 (SIM3191160)	BBE	16 " X 0.375 " X 6.120 M	48	293.760 M	27.314	ORIGINAL
7	5-77154 (SIM3211060)	BBE	12 " X 0.375 " X 6.120 M	66	403.920 M	29.749	
8	KA7660 (SIM3211090)	BBE	12 " X 0.375 " X 6.120 M	1	6.120 M	0.451	

NO.	HEAT NO (BATCH NO.)	HYDROSTATIC TEST 5 Sec. psi	RESULT	N.D.T U *2	VISUAL & DIMENSION	FLATTENING	SHOCK	COMPRESSION	MAGNETISM RESIDUAL GAUSS	BENDING *3	DRIFT	CRUSH	FLARING	FLANGE	REVERSE FLATTENING
기준 SPEC									30						
5	SQ66667 (SIM3191150)	1000	G	G	G	G			G						
6	KA7675 (SIM3191160)	1000	G	G	G	G			G						
7	5-77154 (SIM3211060)	1260	G	G	G	G			G						
8	KA7660 (SIM3211090)	1260	G	G	G	G			G						

NO.	HEAT NO (BATCH NO.)	ZINC COATING TEST WEIGHT OF ZINC COAT-ING	균일성 C.S *4	알칼리 ALK *5	DESIG *6	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti		CEQ *8	DIR *9	TENSILE STRENGTH psi	YIELD STRENGTH psi	E.L % *10	IMPACT TEST (℃) ENERGY Joule	SHEAR AREA %	HARDNESS TEST HRB	HEAT TREATMENT SN *11
						2			3		2	2	2	2	3	3	3										
						*7																					
기준 SPEC					MAX	26		120	30	30	40	40	40	15	80												99
					MIN																60200	35500					
5	SQ66667 (SIM3191150)				H	17	1	78	9	4																	
					P	16	1	77	7	5	2	1	1	TR	2	TR	2			T	72370	53800	38			83	G
					P	17	1	77	8	5	2	1	1	TR	2	TR	2			W	75560						
6	KA7675 (SIM3191160)				H	15	2	81	16	4																	
					P	14	2	82	15	3	1	1	2	TR	1	1	2			T	77010	66420	36			85	G
					P	16	1	80	16	3	1	1	2	TR	1	1	2			W	80780						
7	5-77154 (SIM3211060)				H	17	17	42	11	3																	
					P	16	16	41	10	4	1	2	2	TR	2	1	1			T	69030	48870	38			83	G
					P	17	17	42	12	3	1	2	2	TR	2	1	1			W	73820						
8	KA7660 (SIM3211090)				H	14	1	77	15	3																	
					P	14	1	78	14	2	1	1	2	TR	2	1	2			T	75560	63380	33			84	G
					P	15	TR	77	13	3	1	1	2	TR	2	1	2			W	78750						

NOTE: *1 ~ *11: Refer To Others

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9	SQ66708 (SIM3222170)	BBE	14 " X 0.375 " X 6.120 M	61	373.320 M	30.269	
10	SQ66712 (SIM3282110)	BBE	12 " X 0.500 " X 6.120 M	29	177.480 M	17.297	ORIGINAL
11	SQ66710 (SIM3291010)	BBE	12 " X 0.500 " X 6.120 M	22	134.640 M	13.122	

NO.	HEAT NO (BATCH NO.)	HYDROSTATIC TEST 5 Sec. psi	RESULT	N·D·T U *2	VISUAL & DIMENSION	FLATTENING	SHOCK	COMPRESSION	REESIDUAL MAGNETISM GAUSS	BENDING *3	DRIFT	CRUSH	FLARING	FLANGE	REVERSE	FLATTENING	ZINC COATING TEST WEIGHT OF ZINC COATING	균일성 C.S *4	알칼리 ALK *5
기준 SPEC									30										
9	SQ66708 (SIM3222170)	1150	G	G	G	G			G										
10	SQ66712 (SIM3282110)	1680	G	G	G	G			G										
11	SQ66710 (SIM3291010)	1680	G	G	G	G			G										

NO.	HEAT NO (BATCH NO.)	DESIG	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	CEQ *8	DIR *9	TENSILE TEST (Gage Length : 50mm) TENSILE STRENGTH psi	YIELD STRENGTH psi	E.L % *10	IMPACT TEST (℃) ENERGY Joule	SHEAR AREA %	HARDNESS TEST HRB	HEAT TREATMENT SN *11
			2			3		2	2	2	2	3	3	3									
			*6			*7									*8	*9							
기준 SPEC		MAX	26		120	30	30	40	40	40	15	80										99	
		MIN															60200	35500					
9	SQ66708 (SIM3222170)	H	17	1	76	10	5																
		P	16	2	75	10	6	1	2	2	TR	1	1	1		T	70340	55980	41			83	G
		P	16	2	75	10	6	1	2	2	TR	1	1	1		W	78900						
10	SQ66712 (SIM3282110)	H	18	1	77	11	4																
		P	17	2	78	11	5	1	2	1	TR	1	1	2		T	71350	53660	40			84	G
		P	17	2	77	12	4	1	2	1	TR	2	1	2		W	77300						
11	SQ66710 (SIM3291010)	H	18	1	78	11	4																
		P	17	TR	77	12	5	1	2	2	TR	1	1	1		T	71640	54240	37			85	G
		P	18	1	77	12	3	1	2	2	TR	1	1	1		W	76870						

NOTE: *1 ~ *11: Refer To Others

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