MILL'S QUALITY CERTIFICATE

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.: E201004-0121-000849(5005233)

제 품 명
COMMODITY : E.R.W STEEL PIPE

제 품 규 격
SPECIFICATION : API 5LB PSL1/ASTM A53B(2007)

발 급 일 자
DATE OF ISSUE : 2010.04.12

계 약 서 번 호
L/C No. (P/O No.) : 1103077092

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	SA39979 (SHK3122040)	BBE	12 " X 0.375 " X 6.120 M	10	61.200 M	4.507	CONFIRM TO NACE NORM MR0175(LAST EDITION)
2	SB66603 (SHK3151080)	BBE	12 " X 0.250 " X 6.120 M	28	171.360 M	8.587	*ERW: CHEMICAL COMPOSITION, HEAT TREATMENT AND HARDNESS ONLY
3	SB67815 (SHK3231050)	BBE	14 " X 0.250 " X 6.120 M	21	128.520 M	7.083	*DSAW:CHEMICAL COMPOSITION AND HARDNESS ONLY
4	SB66923 (SHK3251020)	BBE	14 " X 0.312 " X 6.120 M	15	91.800 M	6.219	

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	SA39979 (SHK3122040)	1260	G	G	G	G			G									
2	SB66603 (SHK3151080)	840	G	G	G	G			G									
3	SB67815 (SHK3231050)	770	G	G	G	G			G									
4	SB66923 (SHK3251020)	950	G	G	G	G			G									

CHEMICAL COMPOSITION(%)

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 HRC	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											22	
	MIN																60200	35500					
1	H	17	2	79	16	4																	
	P	16	2	80	14	6	2	2	2	TR	TR	2	2			T	71350	48730	35			8	G
	P	17	3	80	17	6	2	2	2	TR	TR	2	2			W	77450						
2	H	15	2	68	11	5																	
	P	14	3	69	13	7	2	2	1	TR	TR	TR	TR			T	69320	49740	33			8	G
	P	15	1	68	11	4	2	2	1	TR	TR	TR	TR			W	73530						
3	H	15	1	63	12	9																	
	P	14	1	62	10	9	2	2	1	TR	1	TR	2			T	70050	56130	32			8	G
	P	14	1	63	12	8	2	2	1	TR	1	TR	2			W	76430						
4	H	18	1	82	15	7																	
	P	17	TR	83	14	8	2	2	1	TR	2	2	1			T	74400	50470	34			8	G
	P	18	TR	82	16	5	2	2	1	TR	2	2	1			W	79190						

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

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 포항공장품질경영팀장