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.: E200807-0213-001540(5002660)

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 : 2008.07.18

계 약 서 번 호
L/C No. (P/O No.) : 47LI-C45661-TJFE(0801844)

수 요 가
CUSTOMER : DUFERCO SA

주 문 자
SHIPPER : SEAH STEEL CORPORATION

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
18	26478 (SHI5071010)	BBE	12 " X 0.250 "(1/4") X 6.120 M				
19	SQ37255 (SHI5101080)	BBE	16 " X 0.250 "(1/4") X 6.120 M	74	452.880 M	28.590	
20	SP12917 (SHI5101090)	BBE	16 " X 0.250 "(1/4") X 6.120 M	71	434.520 M	27.431	
21	SP13687 (SHI5102020)	BBE	16 " X 0.375 "(3/8") X 6.120 M	15	91.800 M	8.536	

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									
18	26478 (SHI5071010)			G	G	G			G									
19	SQ37255 (SHI5101080)	660	G	G	G	G			G									
20	SP12917 (SHI5101090)	660	G	G	G	G			G									
21	SP13687 (SHI5102020)	980	G	G	G	G			G									

CHEMICAL COMPOSITION(%)

NO.	HEAT NO (BATCH NO.)	DESIG *6	C	Si	Mn	P	S	CU	NI	CR	MO	V	CEQ *8
			2			3		2	2	2	2	3	
			*7										
기준 SPEC		MAX	26		120	30	30	40	40	40	15	80	
		MIN											
18	26478 (SHI5071010)	P											
		P											
19	SQ37255 (SHI5101080)	H	15	1	65	14	4						
		P	14	2	65	15	2	TR	1	1	TR	1	
		P	14	TR	64	14	4	1	TR	1	TR	TR	
20	SP12917 (SHI5101090)	H	14	1	70	16	6						
		P	13	2	70	15	7	TR	TR	1	TR	1	
		P	14	TR	70	18	5	TR	TR	1	TR	TR	
21	SP13687 (SHI5102020)	H	17	1	81	10	5						
		P	16	TR	81	12	7	TR	TR	1	TR	1	
		P	16	2	82	10	6	1	TR	1	TR	1	

NO.	HEAT NO (BATCH NO.)	TENSILE TEST (Gage Length : 50mm) DIR *9	TENSILE STRENGTH psi	YIELD STRENGTH psi	E.L % *10	IMPACT TEST (℃) ENERGY Joule	SHEAR AREA %	HARDNESS TEST	HEAT TREATMENT SN *11	PROTECTIVE COATING & LINING THICKNESS	P.H
기준 SPEC			60000	35000							
18	26478 (SHI5071010)	T	72110	54040	36						
		W	73974								
19	SQ37255 (SHI5101080)	T	70830	52340	38				G		
		W	72112								
20	SP12917 (SHI5101090)	T	70690	48500	40				G		
		W	73272								
21	SP13687 (SHI5102020)	T	68410	47070	38				G		
		W	71979								

NOTE: *1 ~ *12 : Refer To The Attached Section Designation

OTHER: DESCRIPTION OF GOODS : 1,409.329 MT (+/- 10 PCT.)PRIE ERW PIPES / GRADE: API 5L-B/ ASTM A53B.GRADE:AP 5L-B/ ASTM A53B.
PHYSICAL PROPERTIES SAME AS TENSILE TEST & IMPACTEST.

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.

J. E. KIM

(주식회사세아제강 포항공장품질경영팀장)