CERTIFICATE NO(성적서 번호) : CB04345
DATE OF ISSUE(발행일자) : 2018-11-20
CONTRACT(P/O) NO.(계약번호) : 27377
PR NO.(주문서번호) : F180900121
COMMODITY(제품명) : E.R.W. CARBON STEEL PIPE
SPECIFICATION(제품규격) : ASTM A53 B

검사증명서
MILL TEST CERTIFICATE
EN 10204 TYPE 3.1 - 2004

HYUNDAI STEEL
울산공장 : 울산광역시 북구 염포로 706
706, Yeompo-ro, Buk-gu, Ulsan, Korea

CUSTOMER(고객사): 현대종합상사(주)

No.	TYPE OF PIPE END ※1	SIZE OUT-DIA×THICK×LENGTH (외경×두께×길이)	PCS (본)	WEIGHT (KG)	TOTAL LENGTH (M)	HEAT No.	Hydrostatic Test Pressure PSI	Hydrostatic Test Time SEC	Spec. Min. / Max.	※2	Tensile Strength Base MPa	Tensile Strength Weld MPa	Yield Strength MPa	Y/R Rate %	E.L %	Hardness Test ※3	Hardness Test Max. Value	※2 ※3	Hardness Test & CVN Impact Test: Specimen size	CVN Impact Test(℃) Absorbed Energy(Joule) 1	2	3	avg	Shear Area (%)	D.W.T Test(℃) Shear Area(%) 1	2	avg
									Min.		415	415	240														
									Max.											Criteria : In the case of 10×10)							
1	EB BE	12" X 0.500 " X 6.150 M	10	5,992	61.5	SB39329	1650	5		T	474	535	345		47												
2	EB BE	12" X 0.500 " X 6.150 M	5	2,996	30.75	SQ81943	1650	5		T	475	534	333		43												
3	EB BE	12" X 0.500 " X 6.150 M	1	599	6.15	SQ82595	1650	5		T	473	495	349		42												
4	EB BE	12" X 0.500 " X 6.150 M	10	5,992	61.5	SU19644	1650	5		T	476	526	320		46												

Chemical Composition(%) 2:×100 3:×1000 4:×10000

No.	Heat No.	Spec.	※4	C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	CM3 ※10
				2	2	2	3	3	2	2	2	3	3	3
		Min.												
		Max.		30		120	50	45	40	40	40	150	80	1000
1	SB39329		H	17	1	80	9	4						
			P	17	1	83	9	4	3	1	2	2	2	65
			P	17	1	83	9	3	3	1	2	2	2	68
2	SQ81943		H	18	1	79	14	1						
			P	18	1	82	11	3	1	1	2	1	2	41
			P	18	1	81	11	3	1	1	2	1	2	41
3	SQ82595		H	17	1	77	12	2						
			P	17	1	74	11	6	1	1	2	3	2	42
			P	17	1	74	10	5	1	1	2	3	2	40
4	SU19644		H	18	1	80	11	3						
			P	18	1	81	11	3	1	1	2	1	2	43
			P	18	1	82	11	3	1	1	2	1	2	43

No.	Heat No.	Zn-Coating Test: Zn Coating	Copper Sulfate Test Time	Copper Sulfate Test Result	HC-Test Collapse Pressure psi	H.I.C Test CLR %	CTR %	CSR %	S.S.C.C Test
1	SB39329								
2	SQ81943								
3	SQ82595								
4	SU19644								

Remark
※1) Type of pipe end(관종)
EB:ERW Black BE:Bevel End
※2) L: Longitudinal, T: Transverse
※3) B: Base, W: Weld Line, H: Heat Affected Zone
※4) H: Heat(Ladle) Analysis, P: Product Analysis
※7) For each reduction of 0.01% below the specified C max. an increase of 0.06% Mn above the specified max. will be permitted up to a max. of 1.65%
※10) CM3=Cu+Ni+Cr+Mo+V
※ SPEC YEAR - ASTM A53(2012ED)

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Heat Treatment	Non-Destructive Test (U.T)	Flattening / Bending Test	Visual & Dimension
GOOD	GOOD	GOOD	GOOD

SURVEYOR

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T. h. lim
QA Manager

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									Min.		415	415	240												
									Max.									Criteria : In the case of 10×10)							
		TOTAL	26	15,579	159.9																				

No.	Heat No.	Spec.	※4	C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	CM3 ※10								Zn-Coating Test Zn Coating	Copper Sulfate Test Time	Copper Sulfate Test Result	HC-Test Collapse Pressure	H.I.C Test CLR	CTR	CSR	S.S.C.C Test
				2	2	2	3	3	2	2	2	3	3	3											psi	%	%	%	
		Min.																											
		Max.		30		120	50	45	40	40	40	150	80	1000															

Chemical Composition(%) 2 : ×100 3 : ×1000 4 : ×10000

Heat Treatment	Non-Destructive Test (U.T)	Flattening / Bending Test	Visual & Dimension
GOOD	GOOD	GOOD	GOOD

Remark

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