CERTIFICATE NO(성적서 번호) : CB04240
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.	※2	Tensile Strength Base MPa	Tensile Strength Weld MPa	Yield Strength MPa	Y/R Rate %	E.L %	Hardness Test ※3	Hardness Test Max. Value	Hardness Test & CVN Impact Test ※2 ※3	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	10" X 0.250 " X 6.150 M	163	41,852	1,002.45	JJ112	980	5		T	527	572	399		30												
2	EB BE	10" X 0.250 " X 6.150 M	50	12,838	307.5	ZS1730	980	5		T	474	547	343		40												
		TOTAL	213	54,690	1,309.95																						

No.	Heat No.	Spec.	※4	C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	CM3 ※10	Zn Coating	Copper Sulfate Test Time	Copper Sulfate Test Result	HC-Test Collapse Pressure	H.I.C Test CLR	H.I.C Test CTR	H.I.C Test CSR	S.S.C.C Test
				2	2	2	3	3	2	2	2	3	3	3		Time	Result	psi	%	%	%	
		Min.																				
		Max.		30		120	50	45	40	40	40	150	80	1000								
1	JJ112		H	18	TR	84	11	4														
			P	18	TR	85	11	6	1	TR	1	1	2	21								
			P	18	TR	85	11	5	1	TR	1	1	2	21								
2	ZS1730		H	16	3	63	12	4														
			P	18	2	64	14	7	1	1	2	2	2	50								
			P	17	2	64	13	6	1	1	2	2	2	49								

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
※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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SURVEYOR

T. h. lim
QA Manager

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