CERTIFICATE NO(성적서 번호) : CA05630
DATE OF ISSUE(발행일자) : 2018-10-24
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

CUSTOMER(고객사): 현대종합상사(주)

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

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	16" X 0.500 " X 6.150 M	1	759	6.15	G82059	1310	5		T	512	561	412		47												
2	EB BE	16" X 0.500 " X 6.150 M	42	31,848	258.3	SQ70111	1310	5		T	458	510	317		43												
		TOTAL	43	32,607	264.45																						

No.	Heat No.	Spec.	※4	C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	CM3 ※10	2:×100 3:×1000 4:×10000	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
				Chemical Composition(%)												Zn-Coating Test			HC-Test	H.I.C Test			
			Min.																				
			Max.	30		120	50	45	40	40	40	150	80	1000									
1	G82059		H	9	17	93	13	2															
			P	8	18	93	16	4	2	1	4	8	3	81									
			P	8	18	94	15	4	2	1	4	8	3	81									
2	SQ70111		H	18	1	79	11	3															
			P	17	1	77	11	3	2	1	2	1	2	47									
			P	17	2	77	10	3	2	1	2	1	2	45									

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

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WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.
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SURVEYOR

T. h. lim
QA Manager

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