CERTIFICATE NO(성적서 번호) : C501468 Page 1 of 1
DATE OF ISSUE(발행일자) : 2018 05-10
CONTRACT(P/O) NO.(계약번호) : 26550
PR NO.(주문서번호) : F180200166
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
출산공장 : 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. Min.	Spec. Max.	※2	Tensile Properties(Gage Length : 2 inch) Tensile Strength Base (MPa)	Tensile Strength Weld (MPa)	Yield Strength (MPa)	Y/R Rate (%)	E.L (%)	Hardness Test ※3 Max. Value	※2 ※3	Hardness Test & CVN Impact Test CVN Impact Test(℃) Specimen size	Absorbed Energy(Joule) 1	2	3	avg	Shear Area (%)	D.W.T Test(℃) Shear Area(%) 1	2	avg
												MPa	MPa	MPa	%	%											
							PSI	SEC	Min.	Max.		415	415	240		26			Criteria : In the case of 10×10								
1	EB BE	18" X 0.250 " X 6,150 M	63	27,354	387	SP09045	580	5			T	441	485	250		42											
		TOTAL	63	27,354	387																						

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

No.	Heat No.	Spec.		C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	CM3 ※10
			※4	2	2	2	3	3	2	2	2	3	3	3
		Min.												
		Max.		30		120	50	45	40	40	40	150	80	1000
1	SP09045		H	16	1	44	12	4						
			P	17	1	43	10	2	1	1	2	1	1	37
			P	17	1	43	10	3	1	1	2	2	1	38

Zn-Coating Test Zn Coating	Copper Sulfate Test Time	Copper Sulfate Test Result	HC-Test Collapse Pressure (psi)	H.I.C Test CLR (%)	H.I.C Test CTR (%)	H.I.C Test CSR (%)	S.S.C.C Test

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)

SURVEYOR

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T. h. Lim
QA Manager

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