CERTIFICATE NO(성적서 번호) : BB02835
DATE OF ISSUE(발행일자) : 2017-11-10
CONTRACT(P/O) NO.(계약번호) : 25598
PR NO.(주문서번호) : F170600262
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 (F)	HEAT No.	Hydrostatic Test Pressure PSI	Hydrostatic Test Time SEC	Spec.	※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	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 0.250 " X 20.177 F	66	25,423	1,331.682	G66601	660	5		T	445	459	290		39												
2	EB BE	16" X 0.250 " X 20.177 F	23	8,859	464.071	G66900	660	5		T	450	462	310		39												
3	EB BE	16" X 0.250 " X 20.177 F	2	770	40.354	P35108	660	5		T	481	499	396		38												
4	EB BE	16" X 0.250 " X 20.177 F	63	24,266	1,271.151	P39402	660	5		T	479	474	363		40												

No.	Heat No.	Spec.	※4	Chemical Composition(%) 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		Time	Result	psi	%	%	%	
		Min.																				
		Max.		30		120	50	45	40	40	40	150	80	1000								
1	G66601		H	16	3	45	13	7														
			P	14	3	44	12	7	1	1	2	3	1	52								
			P	14	3	44	12	6	1	1	2	2	1	50								
2	G66900		H	16	1	48	17	8														
			P	14	1	49	16	9	4	2	2	4	1	83								
			P	14	1	49	16	9	4	2	2	3	1	82								
3	P35108		H	6	2	74	14	5														
			P	6	1	74	12	6	1	1	3	5	1	66								
			P	7	1	74	13	6	1	1	3	5	1	66								
4	P39402		H	6	1	75	12	4														
			P	6	1	74	11	6	2	1	3	3	1	68								
			P	6	1	74	11	6	2	1	3	3	1	68								

2 :×100 3 :×1000 4 :×10000

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)

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

본 제품은 관련 규격에 합격되었음을 보증합니다.
WE HEREBY CERTIFY THAT MATERIAL DESCRIBED HEREIN HAS BEEN ACCEPTED IN ACCORDANCE WITH THE PRESCRIBED SPECIFICATION AND ORDER.
* 본 검사증명서에 명기된 규격용도외 사용시 안전상 문제가 발생할 수 있으며, 검사증명서 위.변조시 사문서 위조로 불이익을 당하실 수 있습니다.

SURVEYOR

H.K. CHOI
QA Manager

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CUSTOMER(고객사): 현대종합상사(주)

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									Min.		415	415	240														
									Max.											Criteria : In the case of 10×10)							
5	EB BE	16" X 0.250 " X 20.177 F	2	770	40,354	SQ40450	660	5		T	466	468	313		42												
		TOTAL	156	60,088	3,147.612																						

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	CTR	CSR	S.S.C.C Test
				Chemical Composition(%) 2 :×100 3 :×1000 4 :×10000											Zn-Coating Test			HC-Test	H.I.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								
5	SQ40450		H	18	1	47	11	3														
			P	18	1	46	9	3	1	1	3	3	TR	52								
			P	18	1	46	9	3	1	1	3	3	1	53								

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