CERTIFICATE NO(성적서 번호) : BB03383
DATE OF ISSUE(발행일자) : 2017-11-15
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

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 (F)	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	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
									415	415	240																	
																					Criteria : In the case of 10×10)							
1	EB BE	12" X 0.375 " X 20.177 F	9	4,084	181.593	JA128	1236	5			T	417	450	352		46												
2	EB BE	12" X 0.375 " X 20.177 F	80	36,303	1,614.16	JA130	1236	5			T	437	460	340		45												
3	EB BE	12" X 0.375 " X 20.177 F	24	10,891	484.248	JA132	1236	5			T	447	464	340		43												
4	EB BE	12" X 0.375 " X 20.177 F	3	1,361	60.531	NY607	1236	5			T	445	467	354		39												

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	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	JA128		H	13		66	12	4														
			P	12	TR	65	12	5	1	1	2	2	1	49								
			P	12	TR	65	12	5	1	1	2	2	1	49								
2	JA130		H	13	1	68	10	8														
			P	12	1	66	10	10	2	1	2	2	TR	54								
			P	12	1	66	10	10	2	1	2	2	1	55								
3	JA132		H	14	1	67	12	4														
			P	13	1	66	12	5	2	2	3	3	TR	67								
			P	13	1	66	12	6	2	2	3	3	1	66								
4	NY607		H	14		67	12	4														
			P	13	1	67	11	6	1	1	2	2	1	55								
			P	13	1	66	11	5	1	1	2	2	1	54								

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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MILL TEST CERTIFICATE
EN 10204 TYPE 3.1 - 2004

CUSTOMER(고객사): 현대종합상사(주)

HYUNDAI STEEL
울산공장 : 울산광역시 북구 염포로 706
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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	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)							
5	EB BE	12" X 0.375 " X 20.177 F	3	1,361	60.531	SQ40442	1236	5		T	479	483	350		44												
6	EB BE	12" X 0.375 " X 20.177 F	3	1,361	60.531	SU96370	1236	5		T	422	455	308		45												
7	EB BE	12" X 0.375 " X 20.177 F	1	454	20.177	SU96759	1236	5		T	438	466	340		45												
		TOTAL	123	55,815	2,481.771																						

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	SQ40442		H	18	1	49	15	3														
			P	17	1	45	11	3	1	1	2	5	1	54								
			P	18	1	46	11	3	1	1	2	5	1	55								
6	SU96370		H	18	1	48	9	3														
			P	17	1	47	9	4	1	1	2	3	1	48								
			P	17	1	47	9	4	1	1	2	2	1	47								
7	SU96759		H	18	1	47	13	3														
			P	19	1	47	15	5	1	1	3	4	2	63								
			P	19	1	47	14	4	1	1	3	4	2	62								

Remark

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