CERTIFICATE NO(성적서 번호) : BB02892
DATE OF ISSUE(발행일자) : 2017-11-11
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. / 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	CVN Impact Test(℃) Specimen size	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	14" X 0.250 " X 20.177 F	1	336	20.177	G66640	750	5		T	456	454	322		42												
2	EB BE	14" X 0.250 " X 20.177 F	1	336	20.177	G66901	750	5		T	440	449	288		42												
3	EB BE	14" X 0.250 " X 20.177 F	2	673	40.354	G66904	750	5		T	434	449	290		43												
4	EB BE	14" X 0.250 " X 20.177 F	44	14,800	887.788	P23044	750	5		T	466	481	366		42												

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	G66640		H	17	1	46	17	4														
			P	14	1	49	15	5	4	2	3	3	2	87								
			P	14	1	48	14	4	4	2	3	3	1	85								
2	G66901		H	14	2	45	12	5														
			P	13	2	49	15	7	2	2	3	5	2	80								
			P	13	2	49	15	7	2	2	3	5	2	79								
3	G66904		H	15	2	44	13	6														
			P	13	3	44	13	6	2	2	2	3	1	61								
			P	13	3	45	14	6	2	2	2	2	1	61								
4	P23044		H	6	2	74	14	3														
			P	6	2	79	12	5	2	1	3	5	2	62								
			P	6	2	79	13	5	2	1	3	5	2	61								

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)

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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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. Min. / 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	CVN Impact Test(℃) Specimen size	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	14" X 0.250 " X 20.177 F	2	673	40.354	P34735	750	5		T	454	478	351		43												
6	EB BE	14" X 0.250 " X 20.177 F	40	13,454	807.08	SQ40456	750	5		T	468	454	313		40												
		TOTAL	90	30,272	1,815.93																						

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	P34735		H	6	2	75	13	3														
			P	7	2	74	11	3	2	1	3	2	1	56								
			P	7	2	76	12	4	2	1	3	3	1	57								
6	SQ40456		H	18	1	47	10	3														
			P	16	1	45	8	3	1	1	2	8	1	60								
			P	17	1	45	8	3	1	1	2	7	1	59								

Remark

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

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