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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 Properties(Gage Length : 2 inch) Tensile Strength Base (MPa)	Tensile Strength Weld (MPa)	Yield Strength (MPa)	Y/R Rate (%)	EL (%)	Hardness Test ※3	Hardness Test & CVN Impact Test ※2 ※3	D.W.T Test(°C) Shear Area(%)
									Min.		415	415	240			Max. Value	CVN Impact Test(°C) Absorbed Energy(Joule) Specimen size	1 2 3 avg / Shear Area (%) / 1 2 avg
									Max.								Criteria : In the case of 10×10	
1	EB BE	12" X 0.375 " X 6.150 M	35	15,881	215.25	G74509	1236	5		T	484	479	341		38			
2	EB BE	12" X 0.375 " X 6.150 M	15	6,806	92.25	G74519	1236	5		T	458	526	307		39			
		TOTAL	50	22,687	307.5													

No.	Heat No.	Spec.	※4	Chemical Composition(%) 2:×100 3:×1000 4:×10000 C	Si	Mn ※7	P	S	Cu	N	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								
		Min.																psi	%	%	%	
		Max.		30		120	50	45	40	40	40	150	80	1000								
1	G74509		H	17	2	58	14	3														
			P	16	2	67	13	2	5	2	3	2	1	103								
			P	16	2	67	13	2	5	2	3	2	1	103								
2	G74519		H	17	2	73	12	5														
			P	15	2	75	12	6	5	2	4	3	2	112								
			P	15	2	76	11	5	5	2	4	3	2	114								

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

SURVEYOR

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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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T. h. Lim
QA Manager

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