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CONTRACT(P/O) NO.(계약번호) : 24410
PR NO.(주문서번호) : F161000177
COMMODITY(제품명) : E.R.W. CARBON STEEL PIPE
SPECIFICATION(제품규격) : API 5L B PSL1/ASTM A53B/ASME SA53B

검사증명서
MILL TEST CERTIFICATE
EN10204 3.1/ISO 10474 3.1B

CUSTOMER(고객사): PLESA ANAHUAC Y CIAS., S.A. DE C.V.

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 (%)	※3	Hardness Test Max. Value (HV)	※2 ※3	Hardness Test & CVN Impact Test CVN Impact Test(℃) Absorbed Energy(Joule) Specimen size	1	2	3	avg	Shear Area (%)	D.W.T Test(℃) Shear Area(%) 1	2	avg
											415	415	245		25		248										
1	EB BE	16" X 0.225 " X 20.177 F	82	28.474	1.654.514	P12913	600	5		T	458	442	340		43	B	155		Criteria : In the case of 10×10								
																H	157										
		TOTAL	82	28.474	1.654.514											W	148										

No.	Heat No.	Spec.	※4	Chemical Composition(%) C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	Ti	Nb	B	CM1 ※8	CM2 ※9	Zn-Coating Test Zn Coating	Copper Sulfate Test Time	Copper Sulfate Test Result	HC-Test Collapse Pressure (psi)	H.I.C Test CLR (%)	CTR (%)	CSR (%)	S.S.C.C Test
		Min.																								
		Max.		26		120	30	30	50	50	50	150				10	60	150								
1	P12913		H	6	2	74	12	4																		
			P	6	2	75	10	6	2	1	3	4	2	2	12	1	14	16								
			P	6	2	75	10	6	2	1	3	4	2	2	12	1	13	16								

※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 max. for C, an increase of 0.05% above the specified max. for Mn is permissible, up to a max. of 1.65%
※8 CM1=Nb+V
※9 CM2=Nb+V+Ti

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 max. for C, an increase of 0.05% above the specified max. for Mn is permissible, up to a max. of 1.65%
※8) CM1=Nb+V
※9) CM2=Nb+V+Ti
※ SPEC YEAR – API 5L 45th Edition(2013)/ASTM A53(2012)/ASME SA53 (2015)
※ License No. : 5L-0026
※ Hardness to NACE MR0175(2013ED) / ISO 15156
※ API 5L Annex.E(N.D.E) : O.D≤6":ECT(1.6mm hole), O.D>6":UT(3.2mm hole)
※ Heat treatment : Normalizing(Temp.871~1100℃, Holding time : max30m/min)

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

COPY

SURVEYOR

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H.K. CHOI
QA Manager

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