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COMMODITY(제품명) : S.A.W.L STEEL PIPE

SPECIFICATION(제품규격) : API 5L X42M/BM PSL2/CSA Z245.1-18 290 CAT III

검사증명서
MILL TEST CERTIFICATE
EN 10204 TYPE 3.1 - 2004

CUSTOMER(고객사): 현대종합상사(주)

HYUNDAI STEEL
44993 울산광역시 울주군 온산읍 처용 산업로 58
58, Cheoyongsaneop-ro, Onsan-eup, Ulju-gun, Ulsan, Korea 44993

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 HV	※2 ※3	CVN Impact Test CVN Impact Test(-45℃) Specimen size	Absorbed Energy(Joule) 1	2	3	avg	Shear Area (%)	D.W.T Test(℃) Shear Area(%) 1	2	avg
									Min.		415	415	290		31					21			27				
									Max.		655	655	450	93			248			Criteria : In the case of 10×10)							
1	RB BE	28" X 0.625 " X 40.000 F	24	79,747	960	SR13324	1690	10		T	453	479	325	72	51	B	150	B-T	10X10	395	375	375	381	95			
																H	192	H-T	10X10	292	249	284	275				
																W	217	W-T	10X10	209	202	253	221				
2	RB BE	28" X 0.625 " X 40.000 F	12	39,874	480	SR13328	1690	10		T	454	493	325	72	52	B	146	B-T	10X10	364	266	364	331	95			
																H	175	H-T	10X10	217	252	241	237				
																W	210	W-T	10X10	213	243	209	221				
3	RB BE	28" X 0.625 " X 40.000 F	54	179,431	2,160	SR13331	1690	10		T	451	471	320	71	52	B	152	B-T	10X10	397	379	389	388	95			
																H	171	H-T	10X10	386	389	383	386				
																W	217	W-T	10X10	212	209	208	210				
		TOTAL	90	299,052	3,600																						

No.	Heat No.	Spec.		C	Si	Mn ※7	P	S	Cu	Ni	Cr	Mo	V	Ti	Nb	B	CEQ ※5	PCM ※6				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
				Chemical Composition(%)															2 :×100 3 :×1000 4 :×10000										
			※4	2	2	2	3	3	2	2	2	3	3	3	3	4	3	3							psi	%	%	%	
		Min.																											
		Max.		22	45	120	25	15	50	30	30	150	50	40	50	10	400	250											
1	SR13324		H	8	29	127	11	3	TR	1	2	TR	TR	TR	TR	TR	215	157											
			P	8	28	127	13	4	3	TR	2	1	4	2	2	TR	215	157											
			P	8	29	127	13	4	3	TR	2	1	4	2	2	TR	217	159											
2	SR13328		H	8	28	125	11	4	TR	1	2	TR	TR	TR	TR	TR	210	153											
			P	8	27	124	14	5	2	TR	2	TR	4	1	2	TR	206	153											
			P	8	27	125	13	5	2	TR	2	TR	4	1	2	TR	207	154											
3	SR13331		H	8	26	126	10	2	TR	2	2	TR	TR	TR	TR	TR	202	148											
			P	7	27	124	14	4	3	1	2	2	4	1	2	TR	201	149											
			P	8	27	124	14	4	3	1	2	2	4	1	2	TR	202	150											

Non-Destructive Test (R.T)	Visual & Dimension	Guided Bend Test
GOOD	GOOD	GOOD

Remark

※1) Type of pipe end(관종)
RB:SAW 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
※5) CEQ=C+F×(Mn/6+Si/24+Cu/15+Ni/20+(Cr+Mo+V+Nb)/5+5×B)
※6) PCM=C+Si/30+(Mn+Cu+Cr)/20+Ni/60+Mo/15+V/10+5B
(If, C ≤ 0.12)
※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%
※ Hardness to NACE MR0175(2013ED) / ISO 15156 : Max.248Hv
※ NDT : Radiographic Test 100%
※ IQI:Source Side,ASTM B (wire identity: 8)-WT:0.625Inch
※ Mercury free
※ SPEC YEAR - API 5L 46th Edition(2018)
※ Country of pipe manufacture : (HYUNDAI STEEL)KOREA
※ Steel making:HYUNDAI STEEL(DANGJIN WORKS),Plate roling:DONGKUK STEEL(DANGJIN WORKS)

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SURVEYOR

K.M Lee

QA Manager

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