ORIGINAL

QUALITY CERTIFICATE

주식회사 휴스틸
HUSTEEL Co., Ltd.

HEAD OFFICE : SHINAN B/D 15F, 943-19, DAECHI-DONG, KANGNAM-GU, SEOUL, KOREA
DAEBUL PLANT : 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP, YEONGAM-GUN, JEOLLANAM-DO, KOREA

P/O No. : 16049
L/C No. : 5603210508
발 급 일 자 ISSUED DATE : 2013.11.08
제 품 명 COMMODITY : E.R.W. STEEL PIPE
제 품 규 격 SPECIFICATION : ASTM A500 GRADE-B

증명서번호 CERTIFICATE No. : 131108-342
제 조 번 호 MANUFACTURED No. : 2013-09-201
공 급 자 SUPPLIER : HUSTEEL CO., LTD.
수 요 가 CUSTOMER : PLESA ANAHUAC Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUANTITY PCS	관종 TYPE *1	주문치수 ORDER SIZE SIDE LENGTH inch	W.T inch	LENGTH ft *2	중량 WEIGHT kg/ft	인장시험 TENSILE TEST DIR. *3	TS PSI	YS PSI *4	EL %	YR %	WTS PSI
01	M83318	6	BPE	12"X12"	0.250	40	17.89	L	70,340	54,677	29	78	
02	M85908	47	BPE	12"X12"	0.250	40	17.89	L	70,630	54,967	26	78	
03	M85112	46	BPE	12"X12"	0.250	40	17.89	L	68,600	50,906	27	74	

화학성분 CHEMICAL COMPOSITION(%)

NO.	DIV *5	C -2	Si -2	Mn -3	P -3	S -3	Cu -3	Ni *6	Cr *6	Mo -4	V -4	Nb -4	Ti -4	B -5	CEQ -3	PCM -3
01	H	16	1	46	13	4										
	P	15	1	47	13	4	12									
	P	15	1	47	12	4	12									
02	H	16	1	45	12	4										
	P	15	1	43	11	4	14									
	P	15	1	44	12	3	14									
03	H	16	1	50	15	4										
	P	16	2	49	15	3	16									
	P	16	2	48	16	3	15									

NO.	HYDROSTATIC TEST T.P MPa	H.T sec *9	RESULT	HEAT TREATMENT ℃ *10	ZINC COATING TEST WZC g/m² *11	CST TIMES	THREADS TPI *12	ETL mm	HARDNESS TEST HV	IMPACT TEST (0) ℃ DIV *7	I (AVE)	SIZE *8
01												
02												
03												

*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

NOTE

*1.Type of Pipe Ends

BPE	Black Plain Ends	GPE	Galvanized Plain Ends
BPEB	BPE Bevelled	GPEB	GPE Bevelled
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends
BTC	BlackThreaded & Coupled	GTC	Galvanized Threaded & Coupled

*2. O.D : Outsid Diameter, W.T : Wall Thickness *3. Direction- L : Longitudinal, T : Transverse
*4. Tensile Test -TS : Tensile Strength, YS : Yield Strength, YR : Yield Ratio, EL : Blongation, WTS : Weld tensile strength, Gauge Length : 2 inch, Y.P method : 0.5% Underload
*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr : Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
*8. Specimen Size -A:10x10mm, B :10x7.5mm, C :10x6.6mm, D:10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
*11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 ¢ Drilled Hole

SURVEYOR

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MANAGER OF Q.A TEAM

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수 요 가 CUSTOMER : PLESA ANAHUAC
Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY	관종 TYPE	주문치수 ORDER SIZE			중량 WEIGHT	인장시험 TENSILE TEST						화학성분 CHEMICAL COMPOSITION(%)															
				SIDE LENGTH	W.T	LENGTH		DIR.	TS	YS	EL	YR	WTS	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
		PCS	*1	inch	inch	ft	kg/ft	*3	PSI		%	%	PSI	*5	-2			-3					-4				-5	-3	
				*2					*4						*6														
04	M85112	37	BPE	12"X12"	0.312	40	22.12	L	67,150	49,021	23	73		H	16	1	50	15	4										
														P	15	1	52	15	3	11									
														P	15	1	51	14	3	11									
05	M85112	41	BPE	12"X12"	0.375	40	26.37	L	66,424	47,570	26	72		H	16	1	50	15	4										
														P	15	1	49	15	3	13									
														P	16	1	50	15	4	13									
06	M85112	14	BPE	12"X12"	0.625	40	42.36	L	67,150	47,860	29	71		H	16	1	50	15	4										
														P	16	2	48	15	3	14									
														P	16	1	49	15	3	15									

NO.	HYDROSTATIC TEST T.P	H.T	RESULT	HEAT TREATMENT	ZINC COATING TEST WZC	CST	THREADS TPI	ETL	HARDNESS TEST	IMPACT TEST (0) ℃ DIV	J (AVE)	SIZE
	MPa	sec		℃	g/m²	TIMES		mm	HV	*7		*8
	*9			*10	*11		*12					
04												
05												
06												

*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

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제품규격 SPECIFICATION : ASTM A500 GRADE-B

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제조번호 MANUFACTURED No. : 2013-09-201
공급자 SUPPLIER : HUSTEEL CO., LTD.
수요가 CUSTOMER : PLESA ANAHUAC Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY	관종 TYPE	주문치수 ORDER SIZE SIDE LENGTH	W.T	LENGTH	중량 WEIGHT	인장시험 TENSILE TEST DIR.	TS	YS	EL	YR	WTS
		PCS	*1	inch	inch	ft	kg/ft	*3	PSI		%	%	PSI
				*2				*4					
07	M82930	18	BPE	14"X14"	0.312	40	25.97	L	70,195	54,097	23	77	
08	M82510	24	BPE	14"X14"	0.312	40	25.97	L	70,340	52,646	27	75	
09	M82508	20	BPE	14"X14"	0.312	40	25.97	L	71,646	56,127	30	78	

NO.	화학성분 CHEMICAL COMPOSITION(%) DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
	*5	-2			-3					-4				-5	-3	
		*6														
07	H	16	2	48	13	5										
	P	15	2	47	13	4	17									
	P	15	2	47	12	4	16									
08	H	17	1	48	11	4										
	P	15	2	47	11	4	15									
	P	16	2	46	11	3	16									
09	H	17	1	45	18	5										
	P	16	1	44	18	4	13									
	P	16	1	45	18	4	13									

NO.	HYDROSTATIC TEST T.P (MPa)	H.T (sec)	RESULT	HEAT TREATMENT (℃)	ZINC COATING TEST WZC (g/m²)	CST (TIMES)	THREADS TPI	ETL (mm)	HARDNESS TEST HV	IMPACT TEST (0)℃ DIV	J (AVE)	SIZE
	*9			*10	*11		*12			*7		*8
07												
08												
09												

*13 N·D·T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

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BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends
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NO.	HEAT_NO	수량 QUAN-TITY	관종 TYPE	주문치수 ORDER SIZE SIDE LENGTH	W.T	LENGTH	중량 WEIGHT	인장시험 TENSILE TEST DIR.	TS	YS	EL	YR	WTS
		PCS	*1	inch	inch	ft	kg/ft	*3	PSI	PSI	%	%	PSI
				*2				*4					
10	M83308	22	BPE	14"X14	0.312	40	25.97	L	71,210	58,158	25	82	
11	M83308	22	BPE	14"X14"	0.375	40	31.01	L	70,630	53,517	25	76	
12	M82930	21	BPE	14"X14"	0.375	40	31.01	L	70,195	51,341	27	73	

NO.	화학성분 CHEMICAL COMPOSITION(%) DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
	*5	-2			-3					-4				-5	-3	
		*6														
10	H	16	2	46	15	4										
	P	15	2	45	15	3	14									
	P	16	1	46	15	3	15									
11	H	16	2	46	15	4										
	P	15	2	47	15	3	12									
	P	15	2	45	14	4	13									
12	H	16	2	48	13	5										
	P	15	2	47	13	4	12									
	P	15	2	48	13	4	11									

NO.	HYDROSTATIC TEST T.P (MPa)	H.T (sec)	RESULT	HEAT TREATMENT (℃)	ZINC COATING TEST WZC (g/㎡)	CST (TIMES)	THREADS TPI	ETL (mm)	HARDNESS TEST HV	IMPACT TEST (0)℃ DIV	J (AVE)	SIZE
	*9			*10	*11		*12			*7		*8
10												
11												
12												

*13 N·D·T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

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*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr :Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
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				SIDE LENGTH	W.T	LENGTH		DIR.	TS	YS	EL	YR	WTS	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
		PCS		inch	inch	ft	kg/ft		PSI		%	%	PSI		-2			-3					-4				-5	-3	
			*1	*2				*3	*4					*5	*6														
13	M82512	18	BPE	14"X14"	0.375	40	31.01	L	70,050	52,066	30	74		H	17	1	45	11	4											
														P	16	1	42	11	5	14										
														P	16	1	43	11	4	13										
14	M82508	10	BPE	14"X14"	0.375	40	31.01	L	70,775	52,066	29	74		H	17	1	45	18	5											
														P	16	1	42	14	4	19										
														P	16	1	73	16	5	17										
15	M83384	31	BPE	14"X14"	0.500	40	40.69	L	67,150	47,860	30	71		H	16	1	42	12	5											
														P	15	1	44	12	4	12										
														P	15	1	43	12	4	13										

NO.	HYDROSTATIC TEST T.P	H.T	RESULT	HEAT TREATMENT	ZINC COATING TEST WZC	CST	THREADS TPI	ETL	HARDNESS TEST	IMPACT TEST (0) ℃ DIV	J (AVE)	SIZE
	MPa	sec		℃	g/㎡	TIMES		mm	HV	*7		*8
	*9			*10	*11		*12					
13												
14												
15												

*13 N·D·T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
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BTC	BlackThreaded & Coupled	GTC	Galvanized Threaded & Coupled

*2. O.D : Outsid Diameter, W.T : Wall Thickness *3. Direction- L : Longitudinal, T : Transverse
*4. Tensile Test -TS : Tensile Strength, YS : Yield Strength, YR : Yield Ratio, EL : Elongation, WTS : Weld tensile strength, Gauge Length : 2 inch, Y.P method : 0.5% Underload
*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr : Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
*8. Specimen Size -A : 10x10mm, B : 10x7.5mm, C : 10x6.6mm, D : 10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
*11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 ¢ Drilled Hole

SURVEYOR

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MANAGER OF Q.A TEAM

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ORIGINAL

QUALITY CERTIFICATE

주식회사 휴스틸
HUSTEEL Co., Ltd.

HEAD OFFICE : SHINAN B/D 15F, 943-19, DAECHI-DONG, KANGNAM-GU, SEOUL, KOREA
DAEBUL PLANT : 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP, YEONGAM-GUN, JEOLLANAM-DO, KOREA

P/O No. : 16049
L/C No. : 5603210508
발 급 일 자 ISSUED DATE : 2013.11.08
제 품 명 COMMODITY : E.R.W. STEEL PIPE
제 품 규 격 SPECIFICATION : ASTM A500 GRADE-B

증명서번호 CERTIFICATE No. : 131108-342
제 조 번 호 MANUFACTURED No. : 2013-09-201
공 급 자 SUPPLIER : HUSTEEL CO., LTD.
수 요 가 CUSTOMER : PLESA ANAHUAC Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY PCS	관종 TYPE *1	주문치수 ORDER SIZE SIDE LENGTH inch	W.T inch	LENGTH ft *2	중량 WEIGHT kg/ft	인장시험 TENSILE TEST DIR. *3	TS PSI	YS PSI *4	EL %	YR %	WTS PSI	DIV *5	화학성분 CHEMICAL COMPOSITION(%) C -2	Si	Mn -3	P	S	Cu	Ni	Cr -4	Mo	V	Nb	Ti	B -5	CEQ -3	PCM *6
16	M83308	14	BPE	14"X14"	0.500	40	40.69	L	69,615	51,341	25	74		H	16	2	46	15	4											
														P	15	2	47	14	3	16										
														P	15	2	47	13	3	16										
17	M82510	2	BPE	14"X14"	0.500	40	40.69	L	69,470	49,021	29	71		H	17	1	48	11	4											
														P	16	1	47	11	3	15										
														P	16	1	47	12	4	15										
18	M85179	63	BPE	16"X16"	0.375	40	35.64	L	67,005	47,860	29	71		H	17	2	44	12	3											
														P	16	1	44	12	4	14										
														P	16	2	45	11	3	14										

NO.	HYDROSTATIC TEST T.P MPa	H.T sec	RESULT *9	HEAT TREATMENT ℃ *10	ZINC COATING TEST WZC g/m²	CST TIMES *11	THREADS TPI	ETL mm *12	HARDNESS TEST HV	IMPACT TEST (0) ℃ DIV *7	J (AVE)	SIZE *8
16												
17												
18												

*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

NOTE

*1.Type of Pipe Ends

BPE	Black Plain Ends	GPE	Galvanized Plain Ends
BPEB	BPE Bevelled	GPEB	GPE Bevelled
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends
BTC	BlackThreade & Coupled	GTC	Galvanized Threaded & Coupled

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*8. Specimen Size A:10x10mm, B:10x7.5mm, C:10x6.6mm, D:10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
*11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 ¢ Drilled Hole

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DAEBUL PLANT : 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP, YEONGAM-GUN, JEOLLANAM-DO, KOREA

P/O No. : 16049
L/C No. : 5603210508
발 급 일 자
ISSUED DATE : 2013.11.08
제 품 명
COMMODITY : E.R.W. STEEL PIPE
제 품 규 격
SPECIFICATION : ASTM A500 GRADE-B

증명서번호
CERTIFICATE No. : 131108-342
제 조 번 호
MANUFACTURED No. : 2013-09-201
공 급 자
SUPPLIER : HUSTEEL CO., LTD.
수 요 가
CUSTOMER : PLESA ANAHUAC
Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY	관종 TYPE	주문치수 ORDER SIZE SIDE LENGTH	W.T	LENGTH	중량 WEIGHT	인장시험 TENSILE TEST DIR.	TS	YS	EL	YR	WTS	화학성분 CHEMICAL COMPOSITION(%) DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
		PCS	*1	inch	inch	ft	kg/ft	*3	PSI		%	%	PSI	*5	-2			-3					-4				-5	-3	
				*2					*4						*6														
19	M85183	37	BPE	16"X16"	0.375	40	35.64	L	65,554	47,135	28	72		H	16	1	46	12	3										
														P	15	2	46	13	2	11									
														P	15	1	45	13	3	11									
20	M85627	38	BPE	16"X16"	0.375	40	35.64	L	67,150	46,845	25	70		H	16	1	46	11	4										
														P	15	1	45	11	3	15									
														P	15	1	45	12	3	15									
21	M85187	6	BPE	16"X16"	0.375	40	35.64	L	66,860	47,570	24	71		H	12	2	45	12	4										
														P	13	2	44	11	3	12									
				✓										P	13	2	46	11	3	12									

NO.	HYDROSTATIC TEST T.P	H.T	RESULT	HEAT TREATMENT	ZINC COATING TEST WZC	CST	THREADS TPI	ETL	HARDNESS TEST	IMPACT TEST (0) ℃ DIV	J (AVE)	SIZE
	MPa	sec		℃	g/m²	TIMES		mm	HV	*7		*8
	*9			*10	*11		*12					
19												
20												
21												

*13 N·D·T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

NOTE

*1.Type of Pipe Ends

BPE	Black Plain Ends	GPE	Galvanized Plain Ends
BPEB	BPE Bevelled	GPEB	GPE Bevelled
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends
BTC	BlackThreaded & Coupled	GTC	Galvanized Threaded & Coupled

*2. O.D : Outsid Diameter, W.T : Wall Thickness *3. Direction- L : Longitudinal, T : Transverse
*4. Tensile Test -TS : Tensile Strength, YS : Yield Strength, YR : Yield Ratio, EL : Elongation, WTS : Weld tensile strength, Gauge Length : 2 inch, Y.P method : 0.5% Underload
*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr :Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
*8. Specimen Size -A:10x10mm, B :10x7.5mm, C:10x6.6mm, D:10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
*11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 ¢ Drilled Hole

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HUSTEEL Co., Ltd.

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DAEBUL PLANT : 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP, YEONGAM-GUN, JEOLLANAM-DO, KOREA

P/O No. : 16049
L/C No. : 5603210508
발급일자 ISSUED DATE : 2013.11.08
제품명 COMMODITY : E.R.W. STEEL PIPE
제품규격 SPECIFICATION : ASTM A500 GRADE-B

증명서번호 CERTIFICATE No. : 131108-342
제조번호 MANUFACTURED No. : 2013-09-201
공급자 SUPPLIER : HUSTEEL CO., LTD.
수요가 CUSTOMER : PLESA ANAHUAC
: Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY PCS	관종 TYPE *1	주문치수 ORDER SIZE SIDE LENGTH inch	W.T inch	LENGTH ft *2	중량 WEIGHT kg/ft	인장시험 TENSILE TEST DIR. *3	TS PSI	YS PSI *4	EL %	YR %	WTS PSI
22	M85630	30	BPE	16"X16"	0.500	40	46.86	L	65,989	48,005	27	73	
23	M85190	13	BPE	16"X16"	0.500	40	46.86	L	65,989	48,005	26	73	
24	M85187	51	BPE	16"X16"	0.500	40	46.86	L	64,829	47,135	28	73	

화학성분 CHEMICAL COMPOSITION(%)

NO.	DIV *5	C -2	Si -2	Mn -3	P -3	S -3	Cu -3	Ni -3	Cr -4	Mo -4	V -4	Nb -4	Ti -4	B -5	CEQ -3	PCM -3
22	H	15	1	46	10	3										
	P	14	1	47	10	2	15									
	P	14	1	47	10	3	14									
23	H	16	1	47	11	4										
	P	15	1	45	11	3	11									
	P	14	1	46	11	3	12									
24	H	17	2	45	12	4										
	P	16	2	44	12	3	15									
	P	16	2	44	11	4	17									

NO.	HYDROSTATIC TEST T.P MPa *9	H.T sec	RESULT	HEAT TREATMENT ℃ *10	ZINC COATING TEST WZC g/m² *11	CST TIMES	THREADS TPI *12	ETL mm	HARDNESS TEST HV	IMPACT TEST (0) ℃ DIV *7	J (AVE)	SIZE *8
22												
23												
24												

*13 N·D·T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

Latest edition per ASTM(2010)

NOTE

*1.Type of Pipe Ends

BPE	Black Plain Ends	GPE	Galvanized Plain Ends
BPEB	BPE Bevelled	GPEB	GPE Bevelled
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends
BTC	BlackThreaded & Coupled	GTC	Galvanized Threaded & Coupled

*2. O.D : Outsid Diameter, W.T : Wall Thickness *3. Direction- L : Longitudinal, T : Transverse
*4. Tensile Test -TS : Tensile Strength, YS : Yield Strength, YR : Yield Ratio, EL : Elongation, WTS : Weld tensile strength, Gauge Length : 2 Inch, Y.P method : 0.5% Underload
*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr :Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
*8. Specimen Size -A:10x10mm, B :10x7.5mm, C :10x6.6mm, D:10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
*11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 ℃ Drilled Hole

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증명서번호 CERTIFICATE No. : 131108-342
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공 급 자 SUPPLIER : HUSTEEL CO., LTD.
수 요 가 CUSTOMER : PLESA ANAHUAC Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	수량 QUAN-TITY	관종 TYPE	주문치수 ORDER SIZE SIDE LENGTH	W.T	LENGTH	중량 WEIGHT	인장시험 TENSILE TEST DIR.	TS	YS	EL	YR	WTS
		PCS	*1	inch	inch	ft	kg/ft	*3	PSI		%	%	PSI
				*2					*4				
25	M85183	47	BPE	16"X16"	0.500	40	46.86	L	63,524	47,860	30	75	
26	M85192	12	BPE	16"X16"	0.625	40	57.80	L	64,394	46,410	30	72	
27	M85190	57	BPE	16"X16"	0.625	40	57.80	L	65,844	47,570	30	72	

화학성분 CHEMICAL COMPOSITION(%)

NO.	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
	*5	-2			-3					-4				-5	-3	
		*6														
25	H	16	1	46	12	3										
	P	15	1	47	12	2	16									
	P	15	1	48	12	2	16									
26	H	16	1	46	11	4										
	P	15	1	47	11	3	13									
	P	15	1	47	11	3	12									
27	H	16	1	47	11	4										
	P	15	1	49	11	3	17									
	P	15	1	49	10	3	16									

NO.	HYDROSTATIC TEST T.P (MPa)	H.T (sec)	RESULT	HEAT TREATMENT (℃)	ZINC COATING TEST WZC (g/m²)	CST TIMES	THREADS TPI	ETL (mm)	HARDNESS TEST HV	IMPACT TEST (0) ℃ DIV	J (AVE)	SIZE
	*9			*10	*11		*12			*7		*8
25												
26												
27												

*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
GOOD	GOOD	GOOD		
FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		

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*1.Type of Pipe Ends

BPE	Black Plain Ends	GPE	Galvanized Plain Ends
BPEB	BPE Bevelled	GPEB	GPE Bevelled
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*5. H : Heat analysis, P : Product analysis *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr : Trace *7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
*8. Specimen Size -A:10x10mm, B :10x7.5mm, C:10x6.6mm, D:10x5.0mm, Direction: Transverse *9. T.P : Testing Pressure, H.T : Holding Time *10. Heat Treatment Seam Normalizing
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