

COPY

QUALITY CERTIFICATE



P/O No. : 17077
 L/C No. : M930448
 ISSUED DATE : 2014.02.25
 COMMODITY : E.R.W. STEEL PIPE
 API 5L X-42 PSL1/
 SPECIFICATION : ASTM A53B

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

CERTIFICATE No. : 140225-068
 MANUFACTURED No. : 2014-01-211
 SUPPLIER : HUSTEEL CO., LTD.
 PLESA ANAHUAC
 CUSTOMER : Y CIAS, S.A. DE C.V.

NO.	HEAT_NO	QUAN-TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	TENSILE TEST					CHEMICAL COMPOSITION(%)																		
					O.D	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		
					inch	inch	ft			PSI	%	%	PSI	-2			-3			-4			-5	-3								
01	M92940	44	BPEB	16	16.000	0.312	20	52.32	T	68,310	54,967	40	80	73,096	H	6	2	78	13	4	15	10	20	TR	TR	150	10					
02	M96457	7	BPEB	16	16.000	0.312	20	52.32	T	67,150	55,837	41	83	71,210	H	7	1	75	12	3	11	10	20	TR	TR	10	140	10				
03	M89472	1	BPEB	16	16.000	0.312	20	52.32	T	66,134	52,791	41	80	70,195	H	7	1	74	10	6	15	10	20	TR	TR	10	150	10				

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13	FLATTENING OR BEND TEST		VISUAL& DIMENSION		METALLOGRAPHIC TEST		RESIDUAL MAGNETISM	
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		(0) °C			N · D · T (UT)	GOOD		GOOD		GOOD		GOOD	
	PSI	sec	°C		g/m ²	TIMES	inch	inch		HV	DIV	Energy (Ind, J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST					
01	1400	5	GOOD	930																	
02	1400	5	GOOD	930																	
03	1400	5	GOOD	930																	

- Latest edition per API 5L(45th,2013) ASTM(2012)
 - HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOTE

*1. Type of Pipe Ends <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>BPE</td> <td>Black Plain Ends</td> <td>GPE</td> <td>Galvanized Plain Ends</td> </tr> <tr> <td>BPEB</td> <td>BPE Bevelled</td> <td>GPEB</td> <td>GPE Bevelled</td> </tr> <tr> <td>BTE</td> <td>Black Threaded Ends</td> <td>GTE</td> <td>Galvanized Threaded Ends</td> </tr> <tr> <td>BTC</td> <td>Black Threaded & Coupled</td> <td>GTC</td> <td>Galvanized Threaded & Coupled</td> </tr> </table>	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	BPEB	BPE Bevelled	GPEB	GPE Bevelled	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled	*2. O.D : Outsid Diameter, W.T : Wall Thickness *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 *8. Specimen Size -A:10x10mm, B:10x7.5mm, C:10x6.6mm, D:10x5.0mm, Direction: Transverse *11. WZC : Weight of Zinc Coating, CST : Copper Sulphate Test	*3. Direction- L : Longitudinal, T : Transverse *6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr :Trace *9. T.P : Testing Pressure, H.T : Holding Time *12. TPI : Threads per inch, ETL : Effective length of threads *13. NDT : UT, Reference Standard 3.2 C Drilled Hole	*7. B : Base Metal, W : Weld Line, H : Heat Affected Zone *10. Heat Treatment Seam Normalizing
BPE	Black Plain Ends	GPE	Galvanized Plain Ends																
BPEB	BPE Bevelled	GPEB	GPE Bevelled																
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends																
BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled																

WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ORDER AND ABOVE SPECIFICATION
 THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.1(ISO 10474 3.1 B)

SURVEYOR
MANAGER OF QA TEAM



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P/O No. : 17077
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COMMODITY : E.R.W. STEEL PIPE
API 5L X-42 PSL1/
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SUPPLIER : HUSTEEL CO., LTD.
PLESA ANAHUAC
CUSTOMER : Y CIAS., S.A. DE C.V.

NO.	HEAT_NO	QUAN- TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	TENSILE TEST						CHEMICAL COMPOSITION(%)																		
					O.D	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			
																															inch	inch	ft
					PCS	*1	*2			*3	*4			PSI	*5			*6			*6			*6		*6							
04	M89476	12	BPEB	16	16.000	0.312	20	52.32	T	68,890	54,097	41	79	74,546	H	7	1	78	11	5	14	10	20	TR	150	10							
05	291693	55	BPEB	16	16.000	0.375	20	62.64	T	69,470	47,135	40	68	72,661	H	7	1	79	11	5	15	10	24	10	6	170	5						
06	101052	44	BPEB	16	16.000	0.375	20	62.64	T	78,752	56,272	40	71	74,111	H	16	2	84	15	2	10	10	20	50	10	10	10						

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL & DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		(0) °C	GOOD	GOOD	GOOD	GOOD	GOOD		
	PSI	sec	°C	g/m ²	TIMES	inch	inch	HV	Energy (Ind, J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST				
	*9			*10	*11		*12		*7	*8							
04	1400	5	GOOD	930													
05	1680	5	GOOD	950													
06	1680	5	GOOD	950													

- Latest edition per API 5L(45th,2013) ASTM(2012)
- HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOTE	*1. Type of Pipe Ends				*2. O.D : Outsid Diameter, W.T : Wall Thickness				*3. Direction- L : Longitudinal, T : Transverse											
	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	*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											
	BPEB	BPE Bevelled	GPEB	GPE Bevelled	*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 C Drilled Hole											
	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends																
	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled																

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SURVEYOR

MANAGER OF Q.A TEAM

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YEONGAM-GUN, JEOLLANAM-DO, KOREA

SUPPLIER : HUSTEEL CO., LTD.
PLESA ANAHUAC
CUSTOMER : Y CIAS., S.A. DE C.V.

NO.	HEAT_NO	QUAN- TITY PCS	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT lb/ft	TENSILE TEST					CHEMICAL COMPOSITION(%)																														
					O.D	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														
					inch	inch	ft																								PSI	%	PSI	-2			-3			-4			-5	-3
					*2																										*3	*4				*5	*6							
07	M93673	6	BPEB	16	16.000	0.375	20	62.64	T	70,920	56,997	41	80	72,081	H	6	1	77	14	5	19	10	20	TR	10	250	10																	
08	M91297	1	BPEB	16	16.000	0.375	20	62.64	T	70,340	56,127	41	80	71,646	H	6	1	79	14	5	17	9	21	TR	10	279	7																	
09	M90531	6	BPEB	16	16.000	0.500	20	82.85	T	70,775	56,417	42	80	71,355	H	6	1	76	12	6	16	10	20	TR	TR	230	10																	

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL & DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM											
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		HV	DIV	Energy (Ind, J)	SIZE					GOOD	GOOD	GOOD	GOOD							
	PSI	sec																				g/m ²	TIMES	inch	Energy	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST
	*9																					*10	*11	*12	*7			
07	1680	5	GOOD	950																								
08	1680	5	GOOD	950																								
09	2240	5	GOOD	950																								

- Latest edition per API 5L(45th,2013) ASTM(2012)
- HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOTE

*1. Type of Pipe Ends	*2. O.D : Outsid Diameter, W.T : Wall Thickness	*3. Direction- L : Longitudinal, T : Transverse																
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>BPE</td> <td>Black Plain Ends</td> <td>GPE</td> <td>Galvanized Plain Ends</td> </tr> <tr> <td>BPEB</td> <td>BPE Bevelled</td> <td>GPEB</td> <td>GPE Bevelled</td> </tr> <tr> <td>BTE</td> <td>Black Threaded Ends</td> <td>GTE</td> <td>Galvanized Threaded Ends</td> </tr> <tr> <td>BTC</td> <td>Black Threaded & Coupled</td> <td>GTC</td> <td>Galvanized Threaded & Coupled</td> </tr> </table>	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	BPEB	BPE Bevelled	GPEB	GPE Bevelled	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled	*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
BPE	Black Plain Ends	GPE	Galvanized Plain Ends															
BPEB	BPE Bevelled	GPEB	GPE Bevelled															
BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends															
BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled															
	*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																
	*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 C Drilled Hole																

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MANAGER OF QA TEAM

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SEOUL, KOREA
DAEBUL PLANT : 3RO, DAEBUL INDUSTRIAL COMPLEX, SAMHO-EUP,
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SUPPLIER : HUSTEEL CO., LTD.
PLESA ANAHUAC
CUSTOMER : Y CIAS., S.A. DE C.V.

NO.	HEAT_NO	QUAN- TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	TENSILE TEST					CHEMICAL COMPOSITION(%)																
					O.D	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
					inch	inch	ft			PSI	%	%	PSI	-2			-3			-4			-5	-3						
					*2					*3	*4					*5	*6													
10	M87446	32	BPEB	16	16.000	0.500	20	82.85	T	70,340	59,463	41	85	73,966	H	5	1	74	12	6	13	10	20	TR	TR	240	10			
11	M92946	11	BPEB	16	16.000	0.500	20	82.85	T	70,630	56,272	38	80	74,691	H	4	2	71	9	4	13	8	23	10	8	227	6			
12	SP80123	28	BPEB	16	16.000	0.500	20	82.85	T	73,531	52,211	45	71	82,233	H	4	2	72	10	4	13	7	23	10	7	239	6			

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		(0) °C	Energy (Ind, J)	SIZE	GOOD	GOOD	GOOD	GOOD	GOOD
	PSI	sec			g/m ²	TIMES	inch	HV					DIV	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST	
	*9				*11		*12						*7	*8			
10	2240	5	GOOD	950													
11	2240	5	GOOD	950													
12	2240	5	GOOD	950													

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- HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOTE	*1. Type of Pipe Ends				*2. O.D : Outsid Diameter, W.T : Wall Thickness				*3. Direction- L : Longitudinal, T : Transverse			
	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	*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			
	BPEB	BPE Bevelled	GPEB	GPE Bevelled	*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. W.ZC : 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 C Drilled Hole			
	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends								
	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled								

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					O.D	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	
					inch	inch	ft			PSI	%	%	PSI	-2			-3			-4			-5	-3							
13	M87595	70	BPEB	20	20.000	0.250	20	52.78	T	69,325	56,127	36	81	70,340	H	7	1	76	11	5	15	10	20	TR	10	160	10				
14	485992	56	BPEB	20	20.000	0.250	20	52.78	T	65,554	46,700	43	71	69,615	H	15	2	81	16	1	10	10	10	30	10	10	10				
15	M94176	9	BPEB	24	24.000	0.375	20	94.71	T	69,615	56,417	39	81	73,966	H	6	1	76	12	5	14	10	20	TR	TR	230	10				

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM				
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		(0) °C	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST					GOOD	GOOD	GOOD	GOOD
	PSI	sec			g/m ²	TIMES	inch	inch													
13	950	10	GOOD	950																	
14	950	10	GOOD	950																	
15	1190	10	GOOD	950																	

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	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled	*11. W.ZC : 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 C Drilled Hole			

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SUPPLIER : HUSTEEL CO., LTD.
PLESA ANAHUAC
CUSTOMER : Y CIAS., S.A. DE C.V.

NO.	HEAT_NO	QUAN- TITY PCS	TYPE *1	NOMINAL SIZE	ORDER SIZE			WEIGHT lb/ft	TENSILE TEST					CHEMICAL COMPOSITION(%)																
					O.D	WT	LENGTH		DIR.	TS	YS	EL	YR	WTS	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM
					inch	inch	ft			PSI						-2			-3			-4			-5		-3			
					*2				*4					*5					*6											
16	M94173	6	BPEB	24	24.000	0.375	20	94.71	T	68,455	56,707	39	83	72,516	H	7	1	73	12	4	15	10	20	TR	10	240	10			
17	M94170	9	BPEB	24	24.000	0.375	20	94.71	T	70,920	59,463	39	84	76,577	P	6	1	74	11	4	17	7	22	10	13	247	9			
18	M94165	7	BPEB	24	24.000	0.375	20	94.71	T	70,195	56,562	38	81	73,966	P	6	1	74	12	3	16	9	21	10	13	252	8			

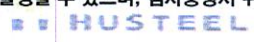
NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL& DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		(0) °C			GOOD				
	PSI	sec		°C	g/m ²	TIMES	inch	inch	HV	DIV	Energy (Ind, J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST		
	*9			*10	*11		*12			*7		*8					
16	1190	10	GOOD	950													
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- Latest edition per API 5L(45th,2013) ASTM(2012)
- HARDNESS MAX 22 HRC AS PER NACE MR 0175

N O T E

*1. Type of Pipe Ends	*2. O.D : Outsidi Diameter, W.T : Wall Thickness	*3. Direction- L : Longitudinal, T : Transverse																
<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td>BPE</td> <td>Black Plain Ends</td> <td>GPE</td> <td>Galvanized Plain Ends</td> </tr> <tr> <td>BPEB</td> <td>BPE Bevelled</td> <td>GPEB</td> <td>GPE Bevelled</td> </tr> <tr> <td>BTE</td> <td>Black Threaded Ends</td> <td>GTE</td> <td>Galvanized Threaded Ends</td> </tr> <tr> <td>BTC</td> <td>Black Threaded & Coupled</td> <td>GTC</td> <td>Galvanized Threaded & Coupled</td> </tr> </table>	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	BPEB	BPE Bevelled	GPEB	GPE Bevelled	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled	*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	*7. B : Base Metal, W : Weld Line, H : Heat Affected Zone
BPE	Black Plain Ends	GPE	Galvanized Plain Ends															
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	*6. -2 : x1/100, -3 : x1/1000, -4 : x1/10000, -5 : x1/10000, Tr : Trace	*9. T.P : Testing Pressure, H.T : Holding Time																
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	*12. TPI : Threads per inch, ETL : Effective length of threads	*13. NDT : UT, Reference Standard 3.2 C Drilled Hole																

SURVEYOR	WE HEREBY CERTIFY THAT THE MATERIAL HEREIN HAS BEEN MADE AND TESTED IN ACCORDANCE WITH THE ORDER AND ABOVE SPECIFICATION THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.1(ISO 10474 3.1 B)	 MANAGER OF Q.A. TEAM
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COPY

QUALITY CERTIFICATE



P/O No. : 17077
L/C No. : M930448

CERTIFICATE No. : 140225-068

ISSUED DATE : 2014.02.25

MANUFACTURED No. : 2014-01-211

COMMODITY : E.R.W. STEEL PIPE
API 5L X-42 PSL1/
SPECIFICATION : ASTM A53B

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

SUPPLIER : HUSTEEL CO., LTD.
PLESA ANAHUAC
CUSTOMER : Y CIAS., S.A. DE C.V.

NO.	HEAT_NO	QUAN-TITY PCS	TYPE *1	NOMINAL SIZE	ORDER SIZE			WEIGHT lb/ft	TENSILE TEST					CHEMICAL COMPOSITION(%)																
					O.D	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
					inch	inch	ft			PSI	%	%	%	PSI		-2			-3			-4			-5	-3				
					*2				*3	*4				PSI	*6															
19	M98291	16	BPEB	24	24.000	0.375	20	94.71	T	68,310	55,837	40	82	72,371	H	6	1	74	12	5	13	10	20	TR	10	230	20			
															P	5	1	75	12	4	15	9	21	10	8	239	17			
															P	5	1	74	12	4	14	9	21	10	8	243	17			

NO.	HYDROSTATIC TEST			HEAT TREATMENT	ZINC COATING TEST		THREADS		HARDNESS TEST	IMPACT TEST			*13 N · D · T (UT)	FLATTENING OR BEND TEST	VISUAL & DIMENSION	METALLOGRAPHIC TEST	RESIDUAL MAGNETISM
	T.P	H.T	RESULT		WZC	CST	TPI	ETL		HV	DIV	Energy (Ind, J)	SIZE	GOOD	GOOD	GOOD	GOOD
	PSI	sec		g/m ²	TIMES	inch			FLANGE TEST					REVERSE FLATTENING TEST	CRUSH TEST		
	*9			*10	*11		*12		*7	*8							
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NOTE

<p>*1. Type of Pipe Ends</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>BPE</td> <td>Black Plain Ends</td> <td>GPE</td> <td>Galvanized Plain Ends</td> </tr> <tr> <td>BPEB</td> <td>BPE Bevelled</td> <td>GPEB</td> <td>GPE Bevelled</td> </tr> <tr> <td>BTE</td> <td>Black Threaded Ends</td> <td>GTE</td> <td>Galvanized Threaded Ends</td> </tr> <tr> <td>BTC</td> <td>Black Threaded & Coupled</td> <td>GTC</td> <td>Galvanized Threaded & Coupled</td> </tr> </table>	BPE	Black Plain Ends	GPE	Galvanized Plain Ends	BPEB	BPE Bevelled	GPEB	GPE Bevelled	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled	<p>*2. O.D : Outsidi Diameter, W.T : Wall Thickness</p> <p>*3. Direction- L : Longitudinal, T : Transverse</p>	<p>*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</p> <p>*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</p> <p>*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</p> <p>*11. W.ZC : Weight of Zinc Coating, CST : Copper Sulphate Test *12. T.P.I : Threads per inch, E.T.L : Effective length of threads *13. NDT : UT, Reference Standard 3.2 C Drilled Hole</p>
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THIS CERTIFICATE IS ISSUED ACCORDING TO EN 10204 3.1(ISO 10474 3.1 B)

MANAGER OF Q.A. TEAM