

COPY

QUALITY CERTIFICATE



주식회사 휴스틸

HUSTEEL Co., Ltd.

P/O No. : 17500
L/C No. : M930642

CERTIFICATE No. : 140402-117

ISSUED DATE : 2014.04.02

MANUFACTURED No. : 2014-03-211

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

HEAD OFFICE : SHINAN B/D 15F, 943-19, DAECHE-DONG, KANGNAM-GU,
SEOUL, KOREA

SUPPLIER : HUSTEEL CO., LTD.

SPECIFICATION : ASTM A53B

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

CUSTOMER : PLESA ANAHUAC 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									*2			lb/ft	*4			*5			*6			*6			*6			
01	N01865	482	BPEB	12 3/4	12.750	0.225	20	30.13	T	65,989	55,257	39	84	70,050	H	6	1	75	15	6	18	10	20	TR	TR	130	10								
02	N00284	130	BPEB	14	14.000	0.250	20	36.75	T	66,714	51,631	41	77	71,355	P	5	1	74	14	4	20	8	23	10	7	153	8								
03	N00288	49	BPEB	14	14.000	0.250	20	36.75	T	67,730	51,051	41	75	68,745	P	5	1	74	15	5	20	9	21	10	6	147	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	GOOD	GOOD	GOOD	GOOD
	PSI	sec			g/㎡	TIMES	inch	inch		HV	DIV	Energy (Ind, J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST	
01	1270	5	GOOD	930													
02	1280	5	GOOD	930													
03	1280	5	GOOD	930													

- Latest edition per API 5L(45th,2013) ASTM A53(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									
	BPEB	BPE Bevelled	GPEB	GPE Bevelled					*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									
	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends					*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									
	BTC	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled					*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									

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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SUPPLIER : HUSTEEL CO., LTD.

SPECIFICATION : ASTM A53B

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

CUSTOMER : PLESA ANAHUAC Y CIAS S.A. DE C.V.

Table with columns: NO., HEAT_NO, QUANTITY, TYPE, NOMINAL SIZE, ORDER SIZE (O.D, W.T, LENGTH), WEIGHT, TENSILE TEST (TS, YS, EL, YR, WTS), CHEMICAL COMPOSITION(%), and various test parameters.

Table with columns: NO., HYDROSTATIC TEST, HEAT TREATMENT, ZINC COATING TEST, THREADS, HARDNESS TEST, IMPACT TEST, N · D · T, FLATTENING OR BEND TEST, VISUAL & DIMENSION, METALLOGRAPHIC TEST, RESIDUAL MAGNETISM.

*1. Type of Pipe Ends
*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. W.ZC : Weight of Zinc Coating, C.S.T : Copper Sulphate Test
*12. T.P.I : Threads per inch, E.T.L : Effective length of threads
*13. N.D.T : UT, Reference Standard 3.2 C Drilled Hole

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YEONGAM-GUN, JEOLLANAM-DO, KOREA

SUPPLIER : HUSTEEL CO., LTD.

CUSTOMER : PLESA ANAHUAC 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																								lb/ft	PSI	%
07	N00273	58	BPEB	14	14.000	0.312	20	45.65	T	67,875	52,501	41	77	68,165	H	6	1	74	13	4	16	10	20	TR	TR	120	10						
08	M96708	47	BPEB	14	14.000	0.312	20	45.65	T	64,539	47,570	40	74	68,600	H	6	1	75	14	5	19	10	20	TR	TR	120	10						
															P	6	2	76	12	3	16	4	24	10	11	160	8						
															P	6	2	76	12	3	15	4	23	10	9	152	7						
															H	6	1	75	14	5	19	10	20	TR	TR	120	10						
															P	6	2	76	14	4	22	13	24	10	7	132	6						
															P	6	1	76	13	4	22	11	24	10	8	128	7						

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							
	PSI	sec	°C		g/m ²	TIMES	inch	inch		HV	DIV	Energy (Ind, J)					
07	1600	5	GOOD	930													
08	1600	5	GOOD	930													

*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	Black Threaded & Coupled	GTC	Galvanized Threaded & Coupled

*2. O.D : Outsid Diameter, W.T : Wall Thickness
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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
*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

SURVEYOR

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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.

CUSTOMER : PLESA ANAHUAC Y CIAS S.A. DE C.V.

NO.	HEAT_NO	QUAN-TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	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																								lb/ft	PSI	%	%	PSI	-2			-3			-4			-5		-3	
					*2																										*3	*4			*5	*6												
09	SP76887	8	BPEB	20	20.000	0.250	20	52.78	T	67,295	44,960	38	67	71,791	H	14	1	69	8	6	22	10	20	TR	TR	10	10																					
10	09479	7	BPEB	20	20.000	0.250	20	52.78	T	66,569	43,509	40	65	74,981	H	13	1	69	8	6	19	6	21	10	9	34	5																					
11	09311	52	BPEB	20	20.000	0.250	20	52.78	T	64,829	51,486	41	79	72,806	H	14	1	69	8	6	19	6	20	10	9	27	5																					

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							
	PSI	sec		g/㎡	TIMES	inch		HV	DIV	Energy (Ind, J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST			
	*9			*10	*11	*12		*7	*8								
09	950	10	GOOD	930													
10	950	10	GOOD	930													
11	950	10	GOOD	930													

- Latest edition per API 5L(45th,2013) ASTM A53(2012)
- HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOTE	*1.Type of Pipe Ends				*2. O.D : Outsid Diameter, WT : 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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CUSTOMER : PLESA ANAHUAC 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 inch	W.T inch	LENGTH ft		DIR.	TS PSI	YS %	EL %	YR %	WTS PSI	DIV	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Ti	B	CEQ	PCM				
					*2		*3																								*4		*5	
12	09309	2	BPEB	20	20.000	0.250	20	52.78	T	68,020	48,150	38	71	72,081	H	16	1	68	21	4	10	10	51	200	TR	TR	10							
															P	15	1	68	18	4	11	6	32	28	10	24	5							
															P	15	1	67	18	4	10	6	31	28	10	20	5							
13	M98362	14	BPEB	20	20.000	0.375	20	78.67	T	69,905	55,982	39	80	71,210	H	6	1	75	15	6	13	10	20	TR	TR	230	10							
															P	5	2	77	15	6	13	2	25	10	11	286	8							
															P	6	1	77	14	6	12	1	23	10	9	274	7							
14	M98381	40	BPEB	20	20.000	0.375	20	78.67	T	71,065	58,013	40	82	69,180	H	6	1	75	11	5	14	10	20	TR	10	230	20							
															P	6	1	77	11	4	12	7	19	10	8	263	10							
															P	6	1	77	11	4	12	7	19	10	7	261	9							

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							
	PSI	sec	°C		g/㎡	TIMES	inch	inch		HV	DIV	Energy (Ind, J)					
12	950	10	GOOD	930													
13	1430	10	GOOD	950													
14	1430	10	GOOD	950													

*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
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*2. O.D : Outsid Diameter, W.T : Wall Thickness
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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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NO.	HEAT_NO	QUAN-TITY	TYPE	NOMINAL SIZE	ORDER SIZE			WEIGHT	TENSILE TEST					CHEMICAL COMPOSITION(%)																							
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					inch	inch	ft																								lb/ft	PSI	%	%	PSI	-2	
					PCS	*1	*2			*3	*4				*5	*6																					
15	M98366	9	BPEB	20	20.000	0.375	20	78.67	T	71,501	58,883	39	82	70,775	H	6	2	81	16	5	13	10	10	TR	TR	230	10										
															P	6	2	82	14	5	22	3	23	10	11	291	8										
16	M84188	37	BPEB	24	24.000	0.250	20	63.47	T	65,119	52,356	41	80	67,005	H	6	1	75	9	6	10	10	10	TR	10	170	10										
															P	5	2	77	10	5	6	1	21	10	15	198	8										
17	677155	11	BPEB	24	24.000	0.250	20	63.47	T	68,600	43,654	37	64	70,340	H	16	1	81	16	2	10	10	10	50	10	10	10										
															P	16	1	82	15	3	9	3	16	10	12	33	9										
															P	16	1	81	14	2	9	3	15	10	11	24	9										

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																										
	PSI	sec	°C	g/m ²	TIMES	inch	inch	HV	DIV	Energy (Ind. J)	SIZE	FLANGE TEST	REVERSE FLATTENING TEST	CRUSH TEST	GOOD	GOOD	GOOD	GOOD	GOOD																	
	*9			*10	*11	*12			*7		*8																									
15	1430	10	GOOD	950																																
16	790	10	GOOD	930																																
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NOTE	*1.Type of Pipe Ends				*2. O.D : Outsid Diameter, WT : Wall Thickness				*3. Direction L : Longitudinal, T : Transverse						
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	BPEB	BPE Bevelled	GPEB	GPE Bevelled	*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						
	BTE	Black Threaded Ends	GTE	Galvanized Threaded Ends	*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						
BTC	BlackThreaded & Coupled	GTC	Galvanized Threaded& Coupled	*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			

SURVEYOR	<p>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)</p>	 MANAGER OF QA TEAM
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COPY

QUALITY CERTIFICATE



주식회사 휴스틸

HUSTEEL Co., Ltd.

P/O No. : 17500
L/C No. : M930642

CERTIFICATE No. : 140402-117

ISSUED DATE : 2014.04.02

MANUFACTURED No. : 2014-03-211

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

HEAD OFFICE : SHINAN B/D 15F, 943-19, DAECHE-DONG, KANGNAM-GU,
SEOUL, KOREA

SUPPLIER : HUSTEEL CO., LTD.

SPECIFICATION : ASTM A53B

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

CUSTOMER : PLESA ANAHUAC 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																								lb/ft	PSI	%	%
18	09304	50	BPEB	24	24.000	0.250	20	63.47	T	68,020	46,555	35	68	75,706	H	16	1	62	8	4	10	10	32	100	TR	TR	10							
		PCS	*1		*2				*3	*4				*5	*6																			
															P	15	1	68	8	4	13	5	37	103	8	29	4							
															P	15	1	68	9	4	13	5	37	105	8	23	4							

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							
	PSI	sec	°C		g/m ²	TIMES	inch	HV		DIV	Energy (Ind. J)	SIZE					
18	790	10	GOOD	930													
	*9			*10	*11		*12			*7		*8					

- Latest edition per API 5L(45th,2013) ASTM A53(2012)
- HARDNESS MAX 22 HRC AS PER NACE MR 0175

NOT E

*1. Type of Pipe Ends	*2. O.D : Outsid Diameter, WT : 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																
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