



TTU INDUSTRIAL CORP., LTD.

TTU Fittings

Tubrialco, S.A. de C.V.
 Av. 100 Metros #1057-A
 Col. Nueva Industrial Vallejo
 México, D.F. CP 07700

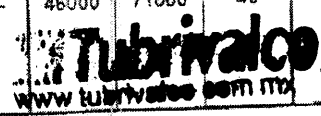
MANUFACTURER'S CERTIFICATE

(Mill Test Certificate) DIN 50049-3 1-B / EN 10204-3.1

Purchaser		Certificate No	: 100004
Product	: SEAMLESS STEEL WELDING FITTING	Order No	: PO. 151009
Specification	: ASTM A-234 WPB - 2006A	Date	: DECEMBER 24, 2009
	: ASME SA234 WPB	L/C No	: TIT

Raw Material Standard	Inspection Standard	Visual Inspection	Dimensional Inspection	
PIPE : ASTM A106 B / A53B / AP15LB PLATE : ASTM A516 Gr 50 / 80	ANSI B16.9 ANSI B16.28	PASS	PASS	
Product & Size (inch)	Heat ID.	Quantity	Heat NO.	Raw Material Maker
1 90 ELBOW LR STD 16"	225	2	J338225	S.M.I. 1Y035401
2 90 ELBOW LR STD 18"	177	2	J337177	S.M.I. 1Y032551
3 90 ELBOW LR STD 20"	503	2	J632503	S.M.I. 1Y017001
4 45 ELBOW LR SCH40 1 1/2"	293	60	564293	B.T.L. 41-059900/001/2634
5 45 ELBOW LR SCH40 4"	156	40	567156	B.T.L. 65-062308/001/2634
6 45 ELBOW LR SCH40 6"	138	100	567138	B.T.L. 65-062308/001/2634
7 45 ELBOW LR SCH40 8"	992	10	85982	S.D.C. 49488
8 45 ELBOW LR SCH40 10"	558	20	317558	M.N.M. 60404
9 45 ELBOW LR SCH40 16"	225	2	J338225	S.M.I. 1Y035401
10 TEE SCH40 3/4"	322	20	567322	B.T.L. 41-059900/001/2634

Standard	Chemical Composition %												Mechanical Test			Average	CE Long
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Al	YS	TS	E	Hardness	Formula
	x 100	x 100	x 100	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100	x 1000	x 1000	psi	psi	%		
in.	-	10	29	-	-	-	-	-	-	-	-	-	35,000	60,000	30	-	-
Max.	30	-	106	48	58	40	40	40	15	8	-	50	-	85,000	-	197	42
1	19	17	72	18	9	1	1	3	0	0	-	-	55500	73000	38	140	32
2	20	20	72	22	14	1	2	4	0	0	-	-	55400	72200	38	171	33
3	19	18	67	16	9	1	2	3	0	0	-	-	37000	67200	34	147	29
4	13	16	76	10	1	11	7	8	2	1	-	-	48000	69000	50	157	29
5	13	15	76	7	2	8	5	9	3	1	-	-	44900	61900	38	137	26
6	13	15	77	6	2	7	5	6	1	1	-	-	48100	64500	38	162	28
7	18	22	76	10	5	8	4	2	2	0	-	-	44236	70053	39	147	32
8	14	21	82	14	6	7	3	6	1	<4	-	-	43700	70100	38	141	32
9	19	17	72	18	9	1	1	3	0	0	-	-	55500	73000	38	140	32
10	15	14	76	7	2	10	8	8	2	1	-	-	46000	71000	46	136	31



We hereby certify that the products described herein have been manufactured, inspected and conforms to standard as specified above.

Abbreviation : JFE = JFE STEEL CORP BTL = BENETELER, GERMANY SDC = SIDERCA, ARGENTINA
 SMI = SUMITOMO, JAPAN DLM = CALMINE, ITALY MNN=MANNESMANN

ALL FITTINGS ARE HEAT TREATED TO MEET NACE MR0175-03 STANDARD SPECIFICATION AT 650-680 C x 1.0 HR.

CE = C + (Mn/6) + (Cr + Ni + V) x 1/4 + (Ni+Cu)/15

ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

[Signature]
 Chief of Quality Assurance Dept