



TTU INDUSTRIAL CORP., LTD.

TTU Fittings

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MANUFACTURER'S CERTIFICATE

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

Purchaser	: PLESA ANAHUAC Y CIAS, SA DE C.V.	Certificate No	: 130120
Product	: CARBON STEEL FITTINGS	Order No	: PO. 13745
Specification	: ASTM A-234 WPB / NACE MR-01-75	Date	: MARCH 4, 2013
	: ASME SA234 WPB	L/C No	: M929152

Raw Material Standard	Inspection Standard	Visual Inspection		Dimensional Inspection
PIPE : ASTM A106 B / A53B / API5L B 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 4"	33882	302	11-1-1472	2554-882
1 90 ELBOW LR STD 4"	32882	48	11-1-1472	2554-882
1 90 ELBOW LR STD 6"	33884	200	11-1-1478	2554-884
4 90 ELBOW LR STD 8"	33814	135	1107015	2554-814
5 90 ELBOW LR STD 8"	32814	95	1107015	2554-814
6 90 ELBOW LR STD 20"	33953	2	521353	2554-531
7 45 ELBOW LR STD 4"	33882	200	11-1-1472	2554-882
8 45 ELBOW LR STD 14"	33315	5	0844607	2554-315
9 45 ELBOW LR STD 16"	33318	7	0844607	2554-318
10 45 ELBOW LR STD 18"	33021	8	2605674	2554-021
11 45 ELBOW LR STD 20"	33953	2	521353	2554-531

Standard	Chemical Composition %													Mechanical Test			Average Hardness	CE Long Formula
	C	SI	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Al	YS	TS	E			
	x 100	x 100	x 100	1000	1000	100	100	100	100	100	100	1000	1000	psi	psi	%		
Min.	-	10	26	-	-	-	-	-	-	-	-	-	35,000	60,000	30	-	-	
Max.	30	-	106	48	58	40	40	40	15	8	-	50	-	85,000	-	197	42	
1	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31	
2	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31	
3	18	21	44	10	12	10	8	4	-	-	-	-	47500	70700	36	156	27	
4	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30	
5	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30	
6	19	24	49	2	2	2	2	6	-	-	-	-	38200	68900	33	155	27	
7	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31	
8	20	23	50	12	10	10	4	4	-	-	-	-	45700	67900	33	132	36	
9	20	23	50	12	10	10	4	4	-	-	-	-	45700	67500	33	140	36	
10	19	22	46	18	6	1	1	1	-	-	-	-	45700	69300	35	144	27	
11	19	24	49	2	2	2	2	6	-	-	-	-	38200	68900	33	155	27	

- We hereby certify that the products described herein have been manufactured, inspected and conform to standard as specified above.
- ALL FITTINGS ARE HEAT TREATED TO MEET NACE MR0175-03 STANDARD SPECIFICATION AT 650-650 C x 1.0 HR.
- CE = C + (Mn/6) + (Cr + Mo + V)/5 + (Ni + Cu)/15
- ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

Chief of Quality Assurance Dept