



TTU INDUSTRIAL CORP., LTD.

TTU Fittings

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MANUFACTURER'S CERTIFICATE

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

Purchaser	: PLESA ANAHUAC Y CIAS., SA DE C.V.	Certificate No	: 130484
Product	: CARBON STEEL FITTINGS	Order No	: PO. 16082
Specification	: ASTM A-234 WPB - 2011A	Date	: AUGUST 5, 2013
	: ASME SA234 WPB	L/C No	: M929849

Raw Material Standard	Inspection Standard	Visual Inspection		Dimensional Inspection
PIPE : ASTM A106 B / A53B / API5LB PLATE : ASTM A516 Gr 50 / 60	ANSI B16.9 ANSI B16.28	PASS		PASS
Product & Size (inch)	Heat ID.	Quantity	Heat NO.	Raw Material Maker
1 90 ELBOW LR SCH40 1 1/4"	36333	100	208-97	2554-333
2 90 ELBOW LR SCH40 1 1/4"	37333	100	208-97	2554-333
3 90 ELBOW LR SCH40 1-1/2"	37333	500	208-97	2554-333
4 90 ELBOW LR SCH40 2"	37801	500	718067	2554-801
5 90 ELBOW LR SCH40 3"	37805	500	321843	2554-805
6 90 ELBOW LR SCH40 20"	3749C	2	1030864	2554-49C
7 90 ELBOW LR SCH40 24"	37831	2	83078	2554-831
8 45 ELBOW LR SCH40 2 1/2"	37803	30	123169	2554-803
9 45 ELBOW LR SCH40 3"	36805	200	321843	2554-805
10 45 ELBOW LR SCH40 4"	33882	400	11-1-1472	2554-882
11 45 ELBOW LR SCH40 6"	37884	150	11-1-1478	2554-884

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	x	x	x	x	x	x	x	x	x	x	x	x	psi	psi	%		
Min.	100	100	100	1000	1000	100	100	100	100	100	1000	1000	35,000	60,000	30	-	-	
Max.	30	-	106	48	58	40	40	40	15	8	-	50	-	85,000	-	197	42	
1	19	21	49	8	6	14	5	5	-	-	-	-	45700	67100	34	125	30	
2	19	21	49	8	6	14	5	5	-	-	-	-	45700	67100	34	125	30	
3	19	21	49	8	6	14	5	5	-	-	-	-	45700	67100	34	125	30	
4	21	24	49	6	12	9	3	4	-	-	-	-	45700	66800	35	135	31	
5	20	22	43	16	10	2	1	1	-	-	-	-	42500	72100	34	167	38	
6	17	37	95	18	6	8	3	8	1	1	1	2	47900	68900	42	155	37	
7	18	22	72	12	3	-	2	1	4	-	-	2	46400	65100	44	164	31	
8	19	20	42	17	10	2	1	2	-	-	-	-	42500	71100	32	170	37	
9	20	22	43	16	10	2	1	1	-	-	-	-	42500	72100	34	167	38	
10	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31	
11	18	21	44	10	12	10	8	4	-	-	-	-	47500	70700	36	156	27	

- We hereby certify that the products described herein have been manufactured, inspected and conforms to standard as specified above.
- ALL FITTINGS ARE HEAT TREATED TO MEET NACE MR0175-03 STANDARD SPECIFICATION AT 650-600 C x 1.0 HR.
- CE = C + (Mn/2) + (Cr + Mo + V)/5 + (Ni+Cu)/15
- ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

Chief of Quality Assurance Dept