



TTU INDUSTRIAL CORP., LTD.

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TTU Fittings
ORIGINAL

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	: 130115
Product	: CARBON STEEL FITTINGS	Order No	: PO. 13745
Specification	: ASTM A-234 WPB / NACE MR-01-75	Date	: FEBRUARY 28, 2013
	: ASME SA234 WPB	L/C No	: M929152

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 STD 4"	32882	509	11-1-1472	2554-882
2 90 ELBOW LR STD 4"	33882	41	11-1-1472	2554-882
3 90 ELBOW LR STD 6"	32884	160	11-1-1478	2554-884
4 90 ELBOW LR STD 6"	29884	10	11-1-1478	2554-884
5 90 ELBOW LR STD 8"	32814	110	1107015	2554-814
6 90 ELBOW LR STD 10"	31815	20	1107003	2554-815
7 90 ELBOW LR STD 10"	33815	56	1107003	2554-815
8 90 ELBOW LR STD 14"	32315	18	0844607	2554-315
9 90 ELBOW LR STD 14"	33315	2	0844607	2554-315
10 90 ELBOW LR STD 20"	33953	6	521353	2554-531
11 45 ELBOW LR STD 2"	29801	200	718067	2554-801

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	psi	psi	%	Hb	x 100
Min.	-	10	29	-	-	-	-	-	-	-	-	-	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	18	21	44	10	12	10	8	4	-	-	-	-	47500	70700	36	156	27
5	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30
6	19	24	51	14	7	11	10	9	-	-	-	-	47100	69600	37	141	39
7	19	24	51	14	7	11	10	9	-	-	-	-	47100	69600	37	141	39
8	20	23	50	12	10	10	4	4	-	-	-	-	45700	67900	33	132	36
9	20	23	50	12	10	10	4	4	-	-	-	-	45700	67900	33	132	36
10	19	24	49	2	2	2	2	6	-	-	-	-	38200	68900	33	155	27
11	21	24	49	6	12	9	3	4	-	-	-	-	45700	66800	35	135	31

- 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 650-680 C x 1.0 HR.
- CE = C + (Mn/8) + (Cr + Mo + V)/5 + (Ni+Cu)/16
- ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

Chief of Quality Assurance Dept