



TTU INDUSTRIAL CORP., LTD.

TTU Fittings

Head Office : 395/5 Silom Road, BangRak, Bangkok 10500, Thailand. Tel: (662)-2377230-40 Fax : (662)-2366927, 2377241
 Production Plant : 33/3 GP. 7, Soi Pon-Chareon, K.M. 16.5 Bangna-Trad Road, Bangplee, Samutprakan 10540, Thailand
 website : www.ttu.co.th email address : site001.ttu@ttugroup.com, chris.we@ttugroup.com

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	: 140012
Product	: CARBON STEEL FITTINGS MADE FROM SEAMLESS PIPES	Order No	: PO. 17201
Specification	: ASTM A-234 WPB - 2011A	Date	: DECEMBER 28, 2013
	: ASME SA234 WPB	L/C No	: M930449

Raw Material Standard	Inspection Standard	Visual Inspection		Dimensional Inspection
PIPE : ASTM A106 B / A53B / API5L B 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 2 1/2"	39803	200	123189	2554-803
2 90 ELBOW LR SCH40 4"	39882	500	11-1-1472	2554-882
3 90 ELBOW LR SCH40 8"	39814	76	1107015	2554-814
4 90 ELBOW LR SCH40 8"	41814	24	1107015	2554-814
5 90 ELBOW LR SCH40 12"	41807	50	671365	2554-807
6 90 ELBOW LR STD 12"	41807	31	671365	2554-807
7 90 ELBOW LR STD 16"	39091	4	J8L7453	2554-091
8 45 ELBOW LR SCH40 20"	4149C	1	1030864	2554-49C
9 TEE SCH40 8"	41942	50	1037205	2554-942
10 TEE SCH40 12"	39512	3	1036667	2554-512
11 CON RED SCH40 4"x3"	41913	200	D08-1-3425	2554-913

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	x 1000	x 1000	x 100	x 100	x 100	x 100	x 100	x 1000	x 1000	psi	psi	%		
Min.	-	10	29	-	-	-	-	-	-	-	-	-	35,000	60,000	30	-	-
Max.	30	-	106	48	58	40	40	40	15	8	-	50	-	85,000	-	197	42
1	19	20	42	17	10	2	1	2	-	-	-	-	42500	71100	32	170	37
2	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31
3	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30
4	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30
5	19	21	57	16	7	6	2	4	-	-	-	-	40400	65400	38	164	30
6	19	21	57	16	7	6	2	4	-	-	-	-	40400	65400	38	164	30
7	19	22	103	14	5	2	4	2	1	0	-	-	53100	76100	36	140	37
8	17	37	95	18	6	8	3	8	1	1	1	2	47900	68900	42	155	37
9	19	22	42	5	2	3	2	2	1	<1	1	2	49300	68200	47	101	27
10	19	25	40	9	5	5	2	4	1	<1	2	1	49300	68900	50	156	27
11	20	22	56	15	12	2	1	4	<1	<1	-	-	46400	66800	36	170	30

COUNTRY OF EXPORT : THAILAND
 COUNTRY OF ORIGIN : THAILAND

VALUE OF THE PO 17201 - US\$94,159.70

- 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 650-880 C x 1.0 HR.
- CE = C + (Mn/5) + (Cr + Mo + V)/5 + (Ni+Cu)/15
- ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

[Signature]
 Chief of Quality Assurance Dept