



Head Office : 395/5 Silom Road, Bang Rak, Bangkok 10500, Thailand. Tel: (662)-2377230-40 Fax : (662)-2366627, 2377241
 Production Plant : 33/3 GP. 7, Soi Pon-Chareon, K.M. 16.5 Bangna-Trad Road, Bangplee, Samulprakan 10540, Thailand
 website : www.ttu.co.th email address : sale001.ttu@ttugroup.com, chris.ws@ttugroup.com

MANUFACTURER'S CERTIFICATE

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

Purchaser	: PLESA ANAHUAC Y CIAS, SA DE C.V.	Certificate No	: 130111
Product	: CARBON STEEL FITTINGS	Order No	: PO. 13745
Specification	: ASTM A-234 WPB/NACE MR-01-75	Date	: FEBRUARY 25, 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 / 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 1 1/2"	32333	200	208-97	2554-333
2 90 ELBOW LR STD 2"	32801	50	718067	2554-801
3 90 ELBOW LR STD 2 1/2"	29803	200	123169	2554-803
4 90 ELBOW LR STD 3"	29344	500	208-72	2554-344
5 90 ELBOW LR STD 4"	29882	100	11-1-1472	2554-882
6 90 ELBOW LR STD 5"	27325	20	11-1-1478	2554-325
7 90 ELBOW LR STD 5"	26812	25	1107015	2554-812
8 90 ELBOW LR STD 10"	29815	24	1107003	2554-815
9 90 ELBOW LR STD 12"	32807	40	671365	2554-807
10 90 ELBOW LR STD 16"	32318	2	0844607	2554-318
11 90 ELBOW LR STD 20"	32953	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	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	19	21	49	8	6	14	5	5	-	-	-	-	45700	67100	34	125	30
2	21	24	49	6	12	9	3	4	-	-	-	-	45700	66800	35	135	31
3	19	20	42	17	10	2	1	2	-	-	-	-	42500	71100	32	170	37
4	20	22	54	15	11	2	1	3	-	-	-	-	46800	67500	30	137	30
5	21	21	42	17	6	10	7	8	-	-	-	-	47500	70700	34	159	31
6	18	21	44	10	12	10	8	4	-	-	-	-	47500	70700	36	156	27
7	19	25	50	15	9	7	4	9	-	-	-	-	47500	70700	35	147	30
8	19	24	51	14	7	11	10	9	-	-	-	-	47100	69600	37	141	39
9	19	21	57	16	7	6	2	4	-	-	-	-	40400	65400	38	164	30
10	20	23	50	12	10	10	4	4	-	-	-	-	45700	67500	33	140	36
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 conforms to standard as specified above.
- ALL FITTINGS ARE HEAT TREATED TO MEET NACE MR0176-03 STANDARD SPECIFICATION AT 650-660 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