



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 : 130104
 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 / APISLB 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
CAP STD 2"	32498	20	243498	050694
CAP STD 3"	32498	30	243498	050694
CAP STD 4"	32516	50	243516	050695
CAP STD 6"	32953	20	488953	545370
CAP STD 8"	32953	20	488953	545370
CAP STD 10"	29442	5	232442	050696
CAP STD 12"	32442	10	232442	050696
CAP STD 14"	32442	5	232442	050696
CAP STD 16"	32442	5	232442	050696

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	%	Hb	x 100
Min.	-	10	29	-	-	-	-	-	-	-	-	-	35,000	60,000	TRANSVERSE		
Max.	30	-	106	48	58	40	40	40	15	8	-	50	-	85,000	17	197	42
1	14	21	74	12	14	0	2	2	0	0	-	-	48100	71600	34	154	27
2	14	21	74	12	14	0	2	2	0	0	-	-	48100	71600	34	154	27
3	14	21	79	14	14	0	0	2	0	0	-	-	45900	68700	27	153	28
4	15	37	91	21	14	0	0	0	0	0	-	-	46900	69000	24	158	30
5	15	37	91	21	14	0	0	0	0	0	-	-	46900	69000	24	158	30
6	18	19	80	16	11	0	0	0	0	0	-	-	49300	71700	27	162	31
7	18	19	80	16	11	0	0	0	0	0	-	-	49300	71700	27	162	31
8	18	19	80	16	11	0	0	0	0	0	-	-	49300	71700	27	162	31
9	18	19	80	16	11	0	0	0	0	0	-	-	49300	71700	27	162	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/6) + Cr + Mo + V/5 + (Ni+Cu)/15