



MANUFACTURER'S CERTIFICATE

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

Purchaser	: PROVEEDORA DE MATERIALES ANGER SA DE CV	Certificate No	: 100606
Product	: CARBON STEEL PIPE FITTINGS	Order No	: PO. 249
Specification	: ASTM A-234 WPB - 2006A	Date	: OCTOBER 25, 2010
	: ASME SA234 WPB	L/C No	: Y000398

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 CON RED STD 14"x10"	062	8	J329062	S.M.I. 1Y037781
2 CON RED STD 16"x12"	001	8	J328001	S.M.I. 1Y032391
3 CON RED STD 24"x20"	844	1	985786	D.L.M. 08/28315
4 90 ELBOW LR XH 3/4"	339	300	J337339	S.M.I. BYYJ6879
5 90 ELBOW LR XH 2 1/2"	574	300	567574	B.T.L. 65-062308/001/2634
6 90 ELBOW LR XH 5"	949	240	563949	B.T.L. 65-040166/001/2637
7 90 ELBOW LR XH 10"	162	25	941162	D.L.M. 94/04908
8 90 ELBOW LR XH 20"	065	3	J338065	S.M.I. 1Y032381
9 90 ELBOW LR XH 24"	921	3	996921	D.L.M. 04/08500
10 45 ELBOW LR XH 10"	162	20	941162	D.L.M. 94/04908

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 100	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	18	17	53	16	15	1	2	3	0	0	-	-	52500	70700	36	147	28
2	20	19	74	15	5	1	2	3	0	0	-	-	51700	71000	43	133	33
3	19	24	93	11	2	16	10	9	4	1	-	-	43300	75400	51	154	39
4	20	18	65	19	13	1	2	4	0	0	-	-	54600	73800	41	141	32
5	13	16	76	7	2	10	7	8	2	1	-	-	48700	64200	36	142	29
6	12	20	84	8	4	13	7	5	2	<1	-	-	48600	65700	40	142	30
7	18	28	78	17	11	21	14	19	5	5	-	-	46700	68800	40	152	39
8	20	20	55	18	13	1	2	3	0	0	-	-	51700	71400	38	166	30
9	15	24	87	9	3	12	8	12	4	4	-	-	48700	72100	37	160	35
10	18	28	78	17	11	21	14	19	5	5	-	-	46700	68800	40	152	39

We hereby certify that the products described herein have been manufactured, inspected and conforms to standards as specified above.

Abbreviation: JFE = JFE STEEL CORP BTL = BENTELER, GERMANY SDC = SIDERCA, ARGENTINA
 SMI = SUMITOMO, JAPAN DLM = DALMINE, ITALY MNM = MANNESMANN

ALL FITTINGS ARE HEAT TREATED TO MEET NACE MR0175-03 STANDARD SPECIFICATION AT 880-880 C x 1.0 HR.
 CE = C + (Mn/8) + (Cr + Mo + V)/5 + (Ni + Cu)/15
 ALL TEES ARE TESTED BY MAGNETIC PARTICLE EXAMINATION (MT)

Chief of Quality Assurance Dept