

# MANUFACTURER'S CERTIFICATE

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

Purchaser	: PROVEEDORA DE MATERIALES AN CER	Certificate No	: 100089
Product	: CARBON STEEL PIPE FITTINGS	Order No	: PO. 243
Specification	: ASTM A-234 WPB - 2006A	Date	: FEBRUARY 23, 2010
	: ASME SA234 WPB	L/C No	: 1878-0056/10

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 1/4"	293	1000	564293	B.T.L. 41-059900/001/2634
2 90 ELBOW LR STD 6"	138	72	567138	B.T.L. 65-062308/001/2634
3 90 ELBOW LR STD 8"	992	102	85992	S.D.C. 49488
4 90 ELBOW LR STD 10"	558	57	317558	M.N.M. 60404
5 90 ELBOW LR STD 12"	099	57	86099	S.D.C. 49492
6 90 ELBOW LR STD 16"	225	6	J338225	S.M.I. 1Y035401
7 90 ELBOW LR STD 18"	177	6	J337177	S.M.I. 1Y032551
8 90 ELBOW LR STD 20"	503	6	J632503	S.M.I. 1Y017001
9 90 ELBOW LR STD 24"	029	6	J411029	S.M.I. 1Y004251
10 45 ELBOW LR STD 16"	225	15	J338225	S.M.I. 1Y035401

Standard	Chemical Composition %												Mechanical Test			Average	CE Long
	C	Si	Mn	P	S	Cu	Ni	Cr	Mo	V	Nb	Al	YS	TS	E	Hardness	Formula
	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	13	16	76	10	1	11	7	8	2	1	-	-	48000	69000	50	157	29
2	13	15	77	6	2	7	5	6	1	1	-	-	48100	64500	38	162	28
3	18	22	76	10	5	8	4	2	2	0	-	-	44236	70053	39	147	32
4	14	21	92	14	6	7	3	6	1	<4	-	-	43700	70100	38	141	32
5	17	25	65	12	4	8	4	3	2	0	-	-	42786	68022	38	164	30
6	19	17	72	18	9	1	1	3	0	0	-	-	55500	73000	38	140	32
7	19	17	72	18	9	1	1	3	0	0	-	-	55400	72200	38	171	33
8	20	20	72	22	14	1	2	4	0	0	-	-	37000	67200	34	147	29
9	19	18	57	16	9	1	2	3	0	0	-	-	50000	71600	41	146	30
9	19	24	56	22	9	1	2	5	1	0	-	-	55500	73000	38	140	32
10	19	17	72	18	9	1	1	3	0	0	-	-	55500	73000	38	140	32

We hereby certify that the products described herein have been manufactured, inspected and conforms to standard 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 MR0176-03 STANDARD SPECIFICATION AT 650-680 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