

**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474.3.1.B)

Tubos de Acero de México, S.A.
Carr. Mty-Laredo Km 24.2
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Vendido a:	PIESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No:	2787 - 2830	Lista de Empaque:	9 0 8 1	Fecha/Date:	19 de Abril de 2007
Sold to:		Customers Order No:		Packing List:			
Especificaciones y Grados / Standard or Specification and Steel Grade	ASME B 16.9 - 2003 and ASME B 16.28 - 1994	Dimensiones y tolerancias / Dimension and tolerances		Factura/Invoice:	Bocas / Ends		
Seamless Fittings according to ASTM A 234 "W" WPB-97, A234 "W" WPB-05a, NACE MR 0175-2003				Biselado / Bevelled ends			
Conform to ASME II Ed. 2001 ASME SA-234 "W", Grade WPB.							

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C			
				ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPATURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S49120	228	CODO 4 X 90° R.I. CED-STD	331	494	35	107				
2	S49119	226	CODO 4 X 90° R.I. CED-STD	325	495	34	111				
3	S47791	528	CODO 3 X 90° R.I. CED-STD	336	488	34	121				
4	S49639	100	CODO 6 X 90° R.I. CED-STD	316	479	32	88				
5	T33434	12	CODO 14 X 90° R.I. CED-STD	317	487	34	85				
6	T32354	5	CODO 16 X 90° R.I. CED-XS	319	474	36	98				
7	T27925	20	RED. CONC. 8 X 4 CED-STD	330	487	33	112				
8	T27926	30	RED. CONC. 8 X 6 CED-STD	273	473	35	92				
9	S46694	150	RED. CONC. 3 X 2 CED-STD	311	489	31	124				
10	T29889	5	CODO 14 X 90° R.I. CED-XS	298	474	39	87				
11	T33052	15	RED. CONC. 6 X 5 CED-STD	371	516	35	91				

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S49120	49120	0.335	0.200	0.730	0.011	0.001	0.290	0.050	0.031	0.001	0.018	0.001	0.001
HF	S49119	49119	0.345	0.200	0.750	0.012	0.001	0.290	0.070	0.039	0.010	0.025	0.001	0.001
HF	S47791	47791	0.335	0.190	0.750	0.010	0.001	0.300	0.050	0.033	0.030	0.018	0.001	0.001
HF	S49639	49639	0.318	0.180	0.750	0.010	0.020	0.300	0.030	0.055	0.010	0.017	0.001	0.001
HF	T33434	33434	0.320	0.180	0.670	0.014	0.003	0.280	0.070	0.054	0.028	0.030	0.000	0.000
HF	T32354	32354	0.330	0.180	0.760	0.012	0.002	0.290	0.050	0.060	0.027	0.030	0.000	0.000
CF	T27925	27925	0.310	0.170	0.670	0.016	0.002	0.290	0.080	0.093	0.032	0.040	0.000	0.000
CF	T27926	27926	0.300	0.160	0.690	0.011	0.003	0.290	0.070	0.076	0.024	0.040	0.000	0.000
CF	S46694	46694	0.324	0.190	0.750	0.008	0.001	0.270	0.030	0.023	0.001	0.017	0.001	0.001
HF	T29889	29889	0.290	0.160	0.660	0.007	0.001	0.270	0.050	0.073	0.031	0.040	0.000	0.000
CF	T33052	33052	0.330	0.170	0.830	0.011	0.001	0.290	0.040	0.059	0.022	0.040	0.000	0.000

Notes: Hot formed fittings in a range from 520°C to 980°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10'

Formado en caliente a 520°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max. Tiempo de permanencia 10'. Inspección Dimensional satisfactoria. Visual dimensional check: Satisfactory. **Jefe de Calidad: Quality Manager:** ING. JOSE MARTINEZ MACIAS