

**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474 3.1 B)

Tubos de Acero de Mexico, S.A.
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Vendido a: **PIESA ANAHUAC Y CIA. S.A. DE C.V.** Pedido del Cliente No: **4897**
 Sold to: **PIESA ANAHUAC Y CIA. S.A. DE C.V.** Customers Order No: **4897**

Especificaciones y Grados / Standard or Specification and Steel Grade
 Seamless Fittings according to ASTM A 234 "W" WPB-97, A234 "W" WPB-95a, NACE MR 0175-2003
 Conforme to ASME II Ed. 2001 ASME SA-234 "W" Grade WPB, NACE MR0103-2003
 ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Numero: **20784** Pagina/Page: **1 DE 1**
 Listado de Empaque: **10708** Fecha/Date: **6 de Agosto de 2008**
 Packing List: **10708**
 Factura/Invoice: **Bocas / Ends**
 Biselado / Bevelled ends

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S25836	20	CODO 6 X 90° R. C. CED-STD	283	459	33	98					
2	T36431	10	CODO 8 X 45° CED-XS	269	472	37	94					
3	T39508	5	CODO 6 X 90° R. I. CED-STD	349	535	42	126					
4	T40182	15	CODO 6 X 90° R. I. CED-STD	323	490	39	122					
5	T39507	100	CODO 6 X 90° R. I. CED-STD	309	475	40	124					
6	T38887	5	CODO 6 X 45° CED-STD	309	462	41	93					
7	T37717	7	CODO 6 X 45° CED-STD	275	475	32	93					
8	T36860	6	CODO 6 X 45° CED-STD	352	493	38	93					
9	S26550	133	CODO 4 X 45° CED-STD	341	475	34	95					
10	S29077	1	CODO 3 X 45° CED-STD	323	500	30	127					
11	S26551	1	CODO 3 X 45° CED-STD	334	485	29	111					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADAH/HEAT M.P. MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S25836	25836	0.320	0.180	0.750	0.010	0.002	0.300	0.030	0.036	0.010	0.020	0.001	0.001
HF	T36431	36431	0.310	0.170	0.690	0.010	0.002	0.290	0.050	0.067	0.022	0.030	0.000	0.000
HF	T39508	39508	0.310	0.180	0.670	0.012	0.002	0.280	0.060	0.047	0.017	0.030	0.000	0.000
HF	T40182	40182	0.320	0.180	0.690	0.015	0.002	0.280	0.060	0.064	0.009	0.030	0.000	0.000
HF	T39507	39507	0.300	0.170	0.680	0.011	0.001	0.280	0.060	0.059	0.012	0.030	0.000	0.000
HF	T38887	38887	0.290	0.160	0.660	0.010	0.002	0.280	0.070	0.060	0.021	0.040	0.000	0.000
HF	T37717	37717	0.340	0.180	0.850	0.010	0.001	0.280	0.050	0.062	0.021	0.030	0.000	0.000
HF	T36860	36860	0.310	0.170	0.690	0.011	0.001	0.290	0.070	0.043	0.022	0.030	0.000	0.000
HF	S26550	26550	0.320	0.190	0.720	0.010	0.002	0.270	0.040	0.018	0.010	0.013	0.001	0.001
HF	S29077	29077	0.320	0.180	0.740	0.011	0.002	0.280	0.040	0.028	0.020	0.018	0.001	0.000
HF	S26551	26551	0.310	0.180	0.720	0.011	0.001	0.280	0.040	0.023	0.010	0.015	0.001	0.000

Notes:
 Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.
 Hot formed fittings in a range from 620°C to 980°C, cooled in still air.
 Cold formed normalized at 940°C max.
 Tiempo de permanencia 10'.
 Holding time 10'.
 Inspección Dimensional: Satisfactoria.
 Visual dimensional check: Satisfactory
 Nº FORMADO EN CALIENTE/HOT FORMED CF FORMADO EN FRIO/COLD FORMED

Quality Manager/Jefe de Calidad:
ING. WALDO GALLEGOS GALVAN

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting. The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.
 Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tuberia Sin Costura) conforme ASTM A106 Grado B con Nº.
 We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or supplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº.
 418146 8002472 8037448 8037557 8036422 8018623 8007239
 8006046 420901 440948 424210

Este material cumple con los requerimientos especificados en la orden.
 The material of this certificate heat number mentioned above is in compliance with the requirements specified in the order.

CC-008