



Tubos de Acero de México, S.A.
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**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**

(DIN EN 10204:2004E - ISO 10474 3.1.B.)

Vendido a: Sold to:	PLESA ANAHUAC Y CIA. S. A. DE C. V.	Numero: Number:	20635	Página/Page:	1 DE 1
Pedido del Cliente No: Customers Order No:	4798 - 4715 -	Lista de Empaque: Packing List:	10638	Fecha/Date:	15 de Julio de 2008
Especificaciones y Grados / Standard or Specification and Steel Grade	Dimensiones y tolerancias / Dimension and tolerances	Factura/Invoice:			
Seamless Fittings according to ASTM A 234 "M" WPB-97, A234 "M" WPB-05a, NACE MR 01.75-2003	ASME B 16.9 - 2003 and ASME B 16.28 - 1994	Bocas / Ends Biselado / Bevelled ends			
Conform to ASME II Ed. 2001 ASME SA-234 "M", Grade WPB, NACE MR0103-2003					

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. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S26549	456	CODO 4 X 90° R.I. CED-STD	290	474	32	93					
2	S27377	528	CODO 3 X 90° R.I. CED-STD	343	520	32	116					
3	T40182	200	CODO 6 X 90° R.I. CED-STD	323	490	39	122					
4	S27575	60	CODO 6 X 45° CED-STD	320	483	37	90					
5	T39645	60	CODO 10 X 90° R.I. CED-STD	320	487	36	99					
6	T39049	1	TEE RED. 6 X 2 CED-XS	326	469	38	92					

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	S26549	26549	0.320	0.180	0.750	0.014	0.001	0.300	0.050	0.032	0.010	0.015	0.001	0.001
HF	S27377	27377	0.350	0.200	0.790	0.017	0.000	0.270	0.040	0.034	0.010	0.033	0.001	0.002
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	S27575	27575	0.330	0.180	0.790	0.009	0.002	0.290	0.050	0.036	0.010	0.017	0.001	0.001
HF	T39645	39645	0.310	0.180	0.700	0.011	0.002	0.280	0.050	0.050	0.007	0.030	0.000	0.000
HF	T39049	39049	0.300	0.170	0.680	0.010	0.002	0.270	0.060	0.060	0.011	0.030	0.000	0.000

Notas:
Formado en caliente a 620°C-680°C, enfriado al aire, Formado en frío normalizado a 940°C max. (Temperatura de permanencia 10'.
Inspección Dimensional: Satisfactoria.
HF: FORMADO EN CALIENTE/HOT FORMED

Notas:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

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

CC-008

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 (Tubería Sin Costura) conforme ASTM A106 Grado B con N°. 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 N°. 420901 431024 80355127 428896 8027551 8023198

"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".

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.