



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**

Tubos de Acero de Mexico, S.A.
Carr. My-Laredo Km. 24.2
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Vendido a: PLESA ANAHUAC Y CIA. S.A. DE C.V.
Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.
Especificaciones y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM A 234 "W" WPB-97, A234 "W" WPB-05a, NACE MR 0175-2003
Conform to ASME II Ed. 2001 ASME SA-234 "W" Grade WPB, NACE MR0103-2003

(DIN EN 10204:2004E - ISO 10474 3.1 B)
Pedido del Cliente No: 5022 -
Customers Order No:
Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Numero: 20968
Pagina/Page: 1 DE 1
Lista de Empaque: 10792
Fecha/Date: 4 de Septiembre de 2008
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. RUPATURA TENSILE STRENGTH (Mpa)	ELONG %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
23	T40517	6	CODO 14 X 90° R. I. CED-40	311	481	33	107					
24	T40156	2	CODO 14 X 90° R. I. CED-40	325	524	42	122					
25	S45280	30	CODO 1 1/2 X 45° CED-STD	357	511	28	122					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T40517	40517	0.300	0.170	0.670	0.009	0.002	0.290	0.060	0.053	0.013	0.030	0.000	0.000
HF	T40156	40156	0.300	0.170	0.700	0.011	0.001	0.290	0.040	0.049	0.006	0.030	0.000	0.000
HF	S45280	45280	0.323	0.180	0.730	0.010	0.001	0.300	0.050	0.055	0.020	0.048	0.001	0.000

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 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° 8039239 8041366 329135

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.

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.
HF: FORMADO EN CALIENTE/HOT FORMED
CF: FORMADO EN FRIOCALDO FORMED

[Signature]
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 "P" 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.