



Tubos de Acero de México, S.A.  
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<b>CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)</b>		Número: Number:  23301	Página/Page:  1 DE 1
Vendido a: Sold to: PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 5617-	Lista de Empaque: Packing List: 11902	Fecha/Date: 30 de Marzo de 2010
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234M Grade WPB, NACE MR0103-2003	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007 and ASME B 16.28 - 1994	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. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	CONDICIONES SAMPLE DIM mm		Joules	Joules	Joules	PROMEDIO AVERAGE
1	T43504	10	CODO 16 X 45° CED-STD	318	483	36	93	2	2				
2	T48082	100	CODO 8 X 90° R.L. CED-XS	292	469	41	118	3	3				
3	S33737	85	CODO 6 X 90° R.L. CED-XS	280	466	37	135	3	3				

**PLEASA ANAHUAC Y CIA. S.A. DE C.V.**

**CONTROL DE CALIDAD**

FECHA: 09 Feb 2010  
E966

FIRMA: E. RUIZ

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	T43504	43504	0.320	0.180	0.680	0.010	0.002	0.300	0.060	0.074	0.017	0.030	0.000	0.000
HF	T48082	48082	0.310	0.180	0.670	0.008	0.002	0.270	0.040	0.066	0.019	0.030	0.000	0.000
HF	S33737	33737	0.340	0.200	0.750	0.009	0.001	0.270	0.040	0.034	0.010	0.017	0.001	0.002

Declaro que los resultados de los Analisis Químicos y Pruebas Mecánicas 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°.

100099037 10007335 479806

"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"

<p>Notas:</p> <p>Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.</p> <p>Timeo de permanencia 10'.</p> <p>Inspección Dimensional: Satisfactoria.</p> <p>HF: FORMADO EN CALIENTE/HOT FORMED</p>	<p>Notes:</p> <p>Hot formed fittings in a range from 620°C to 980°C, cooled in still air.</p> <p>Cold formed normalized at 940°C max.</p> <p>Holding time 10'.</p> <p>Visual dimensional check: Satisfactory</p> <p>CF: FORMADO EN FRIO/COLD FORMED</p>	<p style="text-align: center;">   <b>Quality Manager / Jefe de Calidad:</b>  <b>ING. WALDO GALLEGOS GALVAN</b> </p>	<p>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.</p> <p>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.</p>
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