



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

Tubos de Acero de Mexico, S.A.  
Carr. Mty-Laredo Km 24.2  
Aparado Postal 43  
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<b>Vendido a:</b> PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	<b>Pedido del Cliente No:</b> 5205	<b>Lista de Empaque:</b> 10553	<b>Fecha/Date:</b> 24 de Junio de 2008
<b>Dimensiones y tolerancias / Dimension and tolerances</b>	<b>Customers Order No:</b>	<b>Factura/Invoice:</b> Bocas / Ends Biselado / Bevelled ends	
<b>Especificaciones y Grados / Standard or Specification and Steel Grade</b>			
<b>Seamless Fittings according to ASTM A 234 "W" WPB-97, A334 "W" WPB-96a, NACE MR 01-75-2003</b>			
<b>Conform to ASME B Ed. 2001 ASME SA-234 "W" Grade WPB, NACE MR0103-2003</b>			

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST		PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C			
				ESF. CEBENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules
1	T29437	7	CODO 8 X 90° R.I. CED-XS	298	471	1			
2	T39507	63	CODO 8 X 90° R.I. CED-XS	254	446	1			
3	T38242	9	CODO 16 X 90° R.I. CED-STD	339	495	1			
4	T39507	15	CODO 8 X 90° R.C. CED-STD	277	448	1			
5	T39645	100	TEE 6 CED-STD	309	522	1			

PROCESO PROCESS	COLADA HEAT CODE	COLADAMHEAT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS												
			%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb		
HF	T29437	29437	0.290	0.160	0.670	0.009	0.001	0.270	0.030	0.073	0.027	0.030	0.000	0.000	0.000
HF	T39507	39507	0.300	0.170	0.670	0.012	0.001	0.280	0.050	0.058	0.011	0.030	0.000	0.000	0.000
HF	T38242	38242	0.290	0.170	0.650	0.014	0.001	0.260	0.040	0.056	0.014	0.030	0.000	0.000	0.000
HF	T39507	39507	0.300	0.170	0.670	0.011	0.001	0.280	0.060	0.057	0.012	0.030	0.000	0.000	0.000
HF	T39645	39645	0.300	0.170	0.670	0.009	0.001	0.280	0.050	0.047	0.008	0.030	0.000	0.000	0.000

**Notes:**  
Formado en caliente a 820°C-860°C, enfriado al aire.  
Hot formed fittings in a range from 820°C to 860°C, cooled in still air.

**Notes:**  
Formado en frío normalizado a 840°C máx.  
Cold formed normalized at 840°C máx.

Tempo de permeancia 10'.  
Holding time 10'.

Inspeccion Dimensional: Satisfactoria.  
Visual dimensional check: Satisfactory

CE: FORMADO EN PROCCOOLD FORMED

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

*[Signature]*

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

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderas 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°- 6028011 8028051 8023139 8028524 8027219

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 80.  
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 80.