



**CERTIFICADO DE CALIDAD  
INSPECTION CERTIFICATE**

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

Tubos de Acero de México, S.A.  
Carr. My-Laredo Km 24.2  
Apartado Postal 43  
65550 C. de Flores, N.L. Méx.  
(52) 81 8305 9600 tel  
(52) 81 8305 9620 fax

Vendido a:	PROVEEDORA DE MATERIALES ANGER, S. A.	Pedido del Cliente No:	5164 - 5163 - 5153 -	Lista de Empaque:	10237	Fecha/Date:	25 de Febrero de 2008
Sold to:	DE C. V.	Customers Order No:		Packing List:		Factorial/Invoice:	Bocas / Ends Biselado / Bevelled ends
Especificaciones y Grados / Standard or Specification and Steel Grade				Dimensiones y tolerancias / Dimension and tolerances			
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			
Conform to ASME II Ed. 2001 ASME SA-234 "M" Grade WPB.							

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST			DUREZA HARDNESS HBW	PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
				ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPURA TENSILE STRENGTH (Mpa)	ELONG. %2"		DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T37634	6	CODO 16 X 45° CED-STD	342	494	44	118					
2	T37919	20	CODO 8 X 45° CED-STD	329	469	30	98					
3	T28586	3	CODO 16 X 90° R.I. CED-STD	363	500	32	119					
4	T37634	15	CODO 16 X 90° R.I. CED-STD	342	494	44	118					
5	T38037	18	CODO 12 X 90° R.I. CED-XS	306	500	42	122					
6	S22585	30	RED. CONC. 3 X 2 CED-XS	309	415	34	118					

PROCESS	COLADA HEAT CODE	COLAD/MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T37634	37634	0.300	0.170	0.680	0.008	0.002	0.270	0.050	0.065	0.017	0.050	0.000	0.000
HF	T37919	37919	0.320	0.180	0.700	0.010	0.001	0.280	0.050	0.063	0.017	0.040	0.000	0.000
HF	T28586	28586	0.300	0.170	0.650	0.012	0.002	0.280	0.060	0.079	0.031	0.030	0.000	0.000
HF	T37634	37634	0.300	0.170	0.680	0.008	0.002	0.270	0.050	0.065	0.017	0.050	0.000	0.000
HF	T38037	38037	0.330	0.190	0.680	0.011	0.004	0.250	0.060	0.071	0.023	0.040	0.000	0.000
CF	S22585	22585	0.310	0.170	0.760	0.010	0.000	0.270	0.040	0.029	0.010	0.022	0.001	0.004

Verificamos 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) cuts conform to ASTM A106 Grade B N°.

8005883 8007476 6012621 8005883 8007966 386216

**Notes:**  
Formado en caliente a 620° C-980° C, enfriado al aire.  
Hot formed fittings in a range from 620° C to 980° C, cooled in still air.

Formado en frío normalizado a 940° C max.  
Cold formed normalised 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 FRIO/COLD FORMED

**Notes:**  
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.

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.

Jefe de Calidad:  
Quality Manager:

ING WALTER GALLEGOS GALVAN

CC-008