



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474 3.1.B)

Tubos de Acero de México, S.A.
Carr. Mty-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.**
DE C.V.
Pedido del Cliente No: **5274**
Customers Order No:
Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Lista de Empaque: **10810**
Packing List:
Factura/Invoice: **Bocas / Ends**
Biselado / Bevelled endsFecha/Date: **10 de Septiembre de 2008**

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST			PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
				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
1	T41467	100	CODO 6 X 90° R.I. CED-STD	322	505	42	137				
2	T41224	100	CODO 6 X 90° R.I. CED-STD	321	488	33	118				
3	S24066	5	CODO 6 X 90° R.I. CED-XS	335	469	42	95				

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C	%E	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T41467	41467	0.330	0.190	0.740	0.009	0.002	0.280	0.040	0.061	0.005	0.030	0.000	0.000
HF	T41224	41224	0.300	0.170	0.660	0.016	0.001	0.290	0.050	0.048	0.018	0.030	0.000	0.000
HF	S24066	24066	0.300	0.170	0.710	0.010	0.001	0.280	0.030	0.028	0.010	0.015	0.001	0.000

Notes:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.
Hot formed flange in a range from 620°C to 980°C, cooled in still air.
Cold formed normalized at 840°C max.
Cold formed normalized at 840°C max.
Holding time 10'.
Visual dimensional check. Satisfactory.
Visual dimensional check. Satisfactory.

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.

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.

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) cuts conform to ASTM A106 Grade B N°.
8048846 8048846 400531

Quality Manager: *[Signature]*
ING. WALDO GALLEGOS GALVAN

CF-FORMA00 EN CALIENTE/NOT FORMED
CF-FORMA00 EN FRIJO/COLD FORMED