



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

Número:  
Number:

23457

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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 ANKER, S.A.**  
Sold to: **DE C.V.**

Pedido del Cliente No: **5682-5671-5617-**  
Customers Order No:

Lista de Empaque:  
Packing List: **11978**

Fecha/Date: **21 de Mayo 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	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T49259	10	TEE B CED-STD	325	488	36	120					
2	T48082	22	CODO 8 X 45° CED-STD	310	478	38	120					
3	T47231	2	CODO 8 X 45° CED-STD	304	478	38	120					
4	T49269	30	CODO 16 X 90° R.L. CED-STD	346	507	43	122					
5	T42699	1	CODO 14 X 90° R.L. CED-40	331	522	32	98					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT MP/MDTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T49259	49259	0.310	0.170	0.700	0.012	0.002	0.270	0.040	0.074	0.023	0.030	0.000	0.000
HF	T48082	48082	0.310	0.180	0.650	0.008	0.002	0.280	0.040	0.068	0.020	0.030	0.000	0.000
HF	T47231	47231	0.310	0.180	0.650	0.012	0.001	0.280	0.040	0.054	0.023	0.030	0.000	0.000
HF	T49269	49269	0.310	0.180	0.660	0.011	0.002	0.300	0.020	0.069	0.030	0.030	0.000	0.000
HF	T42699	42699	0.350	0.190	0.840	0.018	0.001	0.320	0.040	0.062	0.023	0.020	0.000	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°: 10021560 10007842 9066436 10021605 9002217

"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 820°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.  
Tempo de permanencia 10'  
Inspección Dimensional: Satisfactoria.  
HF: FORMADO EN CALIENTE/HOT FORMED

Notes:  
Hot formed fittings in a range from 820°C to 980°C, cooled in still air,  
Cold formed normalized at 940°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory  
CF: FORMADO EN FRIO/COLD FORMED

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 "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. 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.