



Tubos de Acero de México, S.A.
 Carr. Atlix-Laredo Km. 24.2
 Apartado Postal 43
 245550 C. de Flores, Tl. Méx.
 (52) 81 8305 9600 tel
 (52) 81 8305 9620 fax

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

Numero:
 Number: 26065
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Vendido a: Sold to: TUVANSA MONTERREY	Pedido del Cliente No: Customers Order No: 11826	Lista de Empaque: Packing List: 13525	Fecha/Date: 30 de Julio de 2012
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.76-2003 Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007		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	T59118	29	CODO 4 X 90° R.L. CED-STD	336	508	34	154					
2	T60764	383	CODO 3 X 90° R.L. CED-STD	336	494	30	152					
3	T60551	62	CODO 8 X 90° R.L. CED-STD	326	484	36	143					
4	T59442	298	CODO 6 X 90° R.L. CED-STD	330	498	35	152					
5	S20808	74	RED. CONC. 3 X 2 CED-STD	279	425	30	120					
6	T61001	27	CODO 16 X 90° R.L. CED-STD	286	483	35	146					
7	S49296	1407	CODO 1 1/2 X 90° R.L. CED-STD	357	511	51	130					
8	S38130	21	CODO 1 1/4 X 90° R.L. CED-STD	347	489	35	118					
9	S49296	384	CODO 1 1/4 X 90° R.L. CED-STD	357	511	51	130					
10	T60763	103	RED. CONC. 6 X 4 CED-STD	320	486	39	156					
11	S46666	445	RED. CONC. 4 X 3 CED-XS	306	452	35	56					

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	T59118	59118	0.340	0.180	0.230	0.016	0.051	0.310	0.060	0.052	0.011	0.030	0.000	0.000
HF	T60764	60764	0.300	0.170	0.660	0.015	0.001	0.295	0.050	0.053	0.022	0.050	0.000	0.000
HF	T60551	60551	0.210	0.170	0.660	0.016	0.001	0.300	0.060	0.075	0.031	0.040	0.000	0.000
HF	T59442	59442	0.300	0.170	0.650	0.018	0.003	0.290	0.050	0.071	0.026	0.030	0.000	0.000
CF	S20808	20808	0.330	0.190	0.820	0.014	0.001	0.260	0.010	0.024	0.010	0.015	0.001	0.001
HF	T61001	61001	0.210	0.180	0.670	0.016	0.001	0.280	0.050	0.051	0.010	0.050	0.000	0.000
HF	S49296	49296	0.320	0.180	0.750	0.009	0.002	0.200	0.040	0.029	0.020	0.054	0.001	0.002
HF	S38130	38130	0.213	0.180	0.710	0.009	0.001	0.280	0.030	0.043	0.020	0.022	0.001	0.001
HF	S49296	49296	0.320	0.180	0.750	0.009	0.002	0.200	0.040	0.029	0.020	0.054	0.001	0.002
CF	T60763	60763	0.310	0.170	0.690	0.014	0.002	0.280	0.060	0.070	0.027	0.040	0.000	0.000
CF	S46666	46666	0.320	0.190	0.760	0.007	0.002	0.280	0.040	0.038	0.020	0.020	0.001	0.002

Certificamos que los resultados de los Análisis 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) cert's conform to ASTM A106 Grade B AP
 12052012 12036704 12039272 12028302 169839 12033063 11061266 258860 11061966 11036717 11042524
 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.

Inspección Dimensional: Satisfactoria. Visual dimensional check: Satisfactory.
 HF: FORMADO EN CALIENTE/HOT FORMED. CF: FORMADO EN FRIJO/COLD FORMED.
 Quality Manager/Jefe de Calidad: ING. WALDO GALLEGOS GALVAN
 The Product described herein was produced in accordance with the above referenced specification and was identified with the "B" which is permanently marked on each fitting. The values of hardness for fittings NPS 2 1/2" and smaller ends obtain the values of hardness for connections of NPS to 2 1/2" and smaller, as shown on the conversion of hardness Rockwell B to Brinell HBW mediante la tabla WILSON DESK CHART 60.