



Tubos de Acero de México, S.A.
Carr. Mty-Laredo Km 24.2
Apartado Postal 43
(85550) C. de Flores, N.L. 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:

25798

Pagina/Page:

1

Vendido a: Sold to:	TUVANSA MONTERREY	Pedido del Cliente No: Customers Order No:	11826	Lista de Empaque: Packing List:	13360	Fecha/Date:	17 de Mayo de 2012
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.75-2003	Dimensiones y tolerancias / Dimension and tolerances	ASME B 16.9 - 2007		Factura/Invoice: Bocas / Ends Biselado / Bevelled ends		
Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003							

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	T52744	528	CODO 3 X 90° R.L. CED-XS	318	489	30	157					
2	T49869	128	RED. CONC. 8 X 4 CED-STD	301	481	41	116					
3	T47708	2	RED. CONC. 8 X 4 CED-STD	309	473	41	111					
4	T55926	50	RED. CONC. 8 X 6 CED-STD	311	487	43	101					
5	T59443	50	CODO 8 X 90° R.L. CED-XS	313	479	37	141					
6	T56989	85	CODO 6 X 90° R.L. CED-XS	330	496	41	115					
7	S20808	220	RED. CONC. 3 X 2 CED-STD	279	425	30	120					
8	T56076	207	CODO 4 X 90° R.L. CED-XS	314	462	43	100					
9	T55441	249	CODO 4 X 90° R.L. CED-XS	331	476	42	122					
10	T56000	9	CODO 16 X 90° R.L. CED-STD	316	472	36	141					
11	S33571	120	CODO 3 X 90° R.C. CED-XS	298	468	31	103					

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	T52744	52744	0.330	0.180	0.760	0.011	0.001	0.300	0.050	0.071	0.035	0.040	0.000	0.000
CF	T49869	49869	0.300	0.180	0.660	0.014	0.002	0.270	0.020	0.065	0.020	0.030	0.000	0.000
CF	T47708	47708	0.320	0.190	0.660	0.012	0.002	0.310	0.040	0.080	0.015	0.030	0.000	0.000
CF	T55926	55926	0.310	0.170	0.680	0.012	0.001	0.290	0.060	0.067	0.021	0.030	0.000	0.000
HF	T59443	59443	0.330	0.180	0.760	0.014	0.001	0.280	0.060	0.055	0.017	0.030	0.000	0.000
HF	T56989	56989	0.310	0.180	0.690	0.013	0.001	0.290	0.050	0.058	0.017	0.030	0.000	0.000
CF	S20808	20808	0.330	0.190	0.820	0.014	0.001	0.280	0.010	0.024	0.010	0.015	0.001	0.001
HF	T56076	56076	0.300	0.170	0.670	0.008	0.000	0.270	0.050	0.051	0.014	0.030	0.000	0.000
HF	T55441	55441	0.320	0.180	0.680	0.009	0.001	0.290	0.070	0.054	0.017	0.030	0.000	0.000
HF	T56000	56000	0.320	0.180	0.710	0.011	0.001	0.290	0.040	0.071	0.020	0.030	0.000	0.000
HF	S33571	33571	0.320	0.190	0.710	0.010	0.003	0.290	0.030	0.027	0.010	0.015	0.001	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°:
11012176 10048763 10050036 11033156 12017293 11052277 368889 11045458 11045458 11039229 479004
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.

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

Notas:
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 obtained 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.