



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

Numero:  
Number: 25877  
Pagina/Page: 1

Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km 24.2  
Apartado Postal 43  
(65550) C. de Flores, N.L. Méx.  
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 12701 - 12885 - 12726	Lista de Empaque: Packing List: 13410	Fecha/Date: 1 de Junio 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 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	T59630	3	CODO 16 X 45° CED-STD	253	471	39	138					
2	T56665	3	CODO 16 X 45° CED-STD	328	490	34	103					
3	T59684	20	TEE 8 CED-STD	294	463	38	144					
4	T53775	40	TEE 4 CED-XS	327	493	43	107					
5	T59968	100	CODO 6 X 90° R.L. CED-XS	291	474	35	145					
6	T56077	112	CODO 2 1/2 X 90° R.L. CED-STD	350	478	39	146					
7	S46803	166	CODO 2 1/2 X 90° R.L. CED-STD	328	498	30	131					
8	T60551	43	CODO 8 X 90° R.L. CED-STD	326	484	36	143					
9	T59443	17	CODO 8 X 90° R.L. CED-STD	345	503	37	150					
10	T60104	10	CODO 10 X 90° R.L. CED-XS	288	468	37	149					
11	T58973	100	TEE 6 CED-STD	317	478	35	138					

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	T59630	59630	0.330	0.190	0.690	0.010	0.001	0.270	0.050	0.058	0.023	0.040	0.000	0.000
HF	T56665	56665	0.300	0.170	0.670	0.010	0.002	0.280	0.040	0.069	0.026	0.030	0.000	0.000
HF	T59684	59684	0.310	0.180	0.650	0.017	0.002	0.280	0.060	0.071	0.023	0.040	0.000	0.000
HF	T53775	53775	0.000	0.180	0.750	0.011	0.002	0.280	0.060	0.058	0.029	0.030	0.011	0.000
HF	T59968	59968	0.000	0.170	0.690	0.013	0.001	0.290	0.040	0.065	0.015	0.030	0.000	0.000
HF	T56077	56077	0.300	0.170	0.690	0.014	0.001	0.280	0.040	0.048	0.011	0.030	0.000	0.000
HF	S46803	46803	0.340	0.190	0.760	0.010	0.001	0.300	0.040	0.047	0.020	0.060	0.002	0.001
HF	T60551	60551	0.310	0.170	0.660	0.016	0.001	0.300	0.060	0.075	0.031	0.040	0.000	0.000
HF	T59443	59443	0.330	0.180	0.750	0.015	0.001	0.290	0.070	0.054	0.017	0.030	0.000	0.000
HF	T60104	60104	0.310	0.180	0.670	0.007	0.003	0.280	0.040	0.077	0.016	0.040	0.000	0.000
HF	T58973	58973	0.310	0.180	0.670	0.014	0.001	0.290	0.030	0.053	0.025	0.030	0.000	0.000

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) certs conform to ASTM A106 Grade B N°:  
12026132 11039738 12025422 11034216 12020221 11038748  
11042716 12032542 12017290 12022597 12016687  
"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 620°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

Notes:  
Hot formed fittings in a range from 620°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.

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