



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

Número:  
Number: 23056  
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Tubos de Acero de México, S.A.  
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 7314 - 7315	Lista de Empaque: Packing List: 11758	Fecha/Date: 15 de Diciembre de 2009
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	S33737	15	CODO 6 X 45° CED-XS	280	466	37	135					
2	T42339	16	TEE 8 CED-STD	308	480	34	110					
3	T42101	30	CODO 6 X 45° CED-STD	263	504	33	107					
4	T40517	8	TEE 8 CED-XS	266	454	39	105					
5	T41223	11	TEE 4 CED-XS	304	477	40	120					
6	T43468	25	TEE 6 CED-XS	293	472	44	95					
7	T43468	10	RED. CONC. 8 X 4 CED-STD	297	472	41	116					
8	T46857	15	RED. CONC. 10 X 8 CED-STD	328	499	41	118					
9	S33942	20	CODO 4 X 45° CED-STD	317	484	32	140					
10	S31052	100	CODO 2 X 90° R.L. CED-STD	321	477	30	118					
11	T43468	30	RED. CONC. 8 X 6 CED-STD	297	472	41	116					

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	S33737	33737	0.340	0.200	0.750	0.009	0.001	0.270	0.040	0.034	0.010	0.017	0.001	0.002
HF	T42339	42339	0.310	0.180	0.650	0.011	0.003	0.260	0.040	0.078	0.013	0.030	0.000	0.000
HF	T42101	42101	0.290	0.160	0.680	0.008	0.001	0.280	0.050	0.045	0.015	0.030	0.000	0.000
HF	T40517	40517	0.300	0.170	0.670	0.008	0.002	0.290	0.060	0.053	0.013	0.030	0.000	0.000
HF	T41223	41223	0.300	0.170	0.660	0.013	0.002	0.260	0.050	0.071	0.013	0.030	0.000	0.000
HF	T43468	43468	0.300	0.170	0.670	0.016	0.002	0.280	0.050	0.047	0.012	0.030	0.000	0.000
CF	T43468	43468	0.300	0.170	0.680	0.017	0.003	0.290	0.050	0.049	0.012	0.030	0.000	0.000
CF	T46857	46857	0.310	0.180	0.660	0.012	0.004	0.290	0.050	0.080	0.029	0.040	0.000	0.000
HF	S33942	33942	0.320	0.180	0.730	0.014	0.001	0.290	0.040	0.069	0.010	0.032	0.001	0.000
HF	S31052	31052	0.320	0.180	0.730	0.010	0.001	0.250	0.040	0.051	0.010	0.020	0.001	0.001
CF	T43468	43468	0.300	0.170	0.680	0.017	0.003	0.290	0.050	0.049	0.012	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°: 479806: 9007700 8057758 9044410 9049429 9033575 9012764 9060617 480575 479030 9012764

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°: 479806: 9007700 8057758 9044410 9049429 9033575 9012764 9060617 480575 479030 9012764

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 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

*Waldo Gallegos Galvan*  
**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.