



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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<b>CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE</b> ( DIN EN 10204:2004E - ISO 10474 3.1.B )		Numero: Number:	Pagina/Page:
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Vendido a: Sold to:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	17081 - 17612	Lista de Empaque: Packing List:	14735	Fecha/Date:	21 de febrero de 2014
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-10, 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	T6404	228	CODO 4 X 90° R.L. CED-STD	336	485	39	153					
2	T5925	110	TEE 4 CED-STD	268	461	35	148					
3	T6402	20	TEE 4 CED-XS	306	478	41	145					
4	T7194	103	CODO 3 X 90° R.L. CED-XS	289	480	33	160					
5	T64661	57	CODO 3 X 90° R.L. CED-XS	343	495	40	153					
6	T6593	150	CODO 4 X 90° R.L. CED-XS	289	465	32	154					
7	T66949	20	RED. CONC. 12 X 10 CED-STD	326	463	38	154					
8	T65578	7	RED. CONC. 14 X 12 CED-STD	350	486	30	152					
9	T63913	4	CODO 10 X 45° CED-80	283	476	37	143					
10	T64059	2	CODO 10 X 45° CED-80	324	479	39	146					
11	T62890	4	CODO 10 X 45° CED-80	330	499	38	140					

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	T6404	6404	0.310	0.180	0.740	0.005	0.001	0.270	0.020	0.047	0.009	0.030	0.000	0.000
HF	T5925	5925	0.300	0.160	0.760	0.005	0.001	0.300	0.040	0.034	0.005	0.020	0.000	0.000
HF	T6402	6402	0.300	0.170	0.710	0.005	0.001	0.310	0.020	0.058	0.009	0.020	0.000	0.000
HF	T7194	7194	0.310	0.180	0.720	0.005	0.001	0.270	0.040	0.030	0.006	0.020	0.000	0.000
HF	T64661	64661	0.310	0.180	0.680	0.015	0.001	0.290	0.030	0.040	0.016	0.030	0.000	0.000
HF	T6593	6593	0.290	0.160	0.720	0.005	0.002	0.260	0.020	0.049	0.010	0.020	0.000	0.000
CF	T66949	66949	0.310	0.170	0.670	0.006	0.001	0.280	0.070	0.069	0.013	0.040	0.000	0.000
CF	T65578	65578	0.290	0.160	0.650	0.014	0.002	0.280	0.050	0.062	0.015	0.030	0.000	0.000
HF	T63913	63913	0.300	0.170	0.680	0.013	0.001	0.290	0.050	0.056	0.020	0.030	0.000	0.000
HF	T64059	64059	0.300	0.170	0.660	0.014	0.002	0.280	0.050	0.064	0.037	0.040	0.000	0.000
HF	T62890	62890	0.350	0.190	0.810	0.013	0.001	0.290	0.040	0.073	0.037	0.040	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°: 13049410 13056833 13056842 13093401 13025664 13092954 13076483 13047011 13009967 13018311 12084557

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-880°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 880°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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<b>CERTIFICADO DE CALIDAD</b> <b>INSPECTION CERTIFICATE</b> ( DIN EN 10204:2004E - ISO 10474 3.1.B )		Numero: Number:  28315	Pagina/Page:  2
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Vendido a: Sold to: <b>PLESA ANAHUAC Y CIA. S.A. DE C.V.</b>	Pedido del Cliente No: Customers Order No: 17612 - 17081 -	Lista de Empaque: Packing List: 14735	Fecha/Date: 21 de febrero de 2014
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-10, 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
12	T64660	40	CODO 4 X 45° CED-XS	279	482	33	150					
13	T68864	10	TEE RED. 8 X 4 CED-XS	316	482	40	149					
14	T66949	4	TEE RED. 10 X 4 CED-XS	328	471	33	154					
15	T59915	1	RED. CONC. 16 X 10 CED-XS	283	471	38	140					
16	T63735	10	TEE 5 CED-STD	315	486	36	147					
17	T65922	5	TEE RED. 12 X 10 C-80	265	453	43	143					

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	T64660	64660	0.310	0.180	0.670	0.013	0.001	0.260	0.040	0.040	0.019	0.030	0.000	0.000
HF	T68864	68864	0.310	0.180	0.670	0.007	0.000	0.290	0.050	0.054	0.017	0.030	0.000	0.000
HF	T66949	66949	0.310	0.170	0.670	0.006	0.001	0.280	0.070	0.066	0.013	0.040	0.000	0.000
CF	T59915	59915	0.330	0.180	0.780	0.015	0.001	0.300	0.040	0.080	0.031	0.040	0.000	0.000
HF	T63735	63735	0.290	0.160	0.660	0.016	0.001	0.270	0.050	0.080	0.022	0.030	0.000	0.000
HF	T65922	65922	0.300	0.170	0.650	0.006	0.000	0.260	0.040	0.065	0.029	0.040	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°:  
13029808 14001053 13067200 12032183 13011815 13064752  
"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	 <b>Quality Manager/Jefe de Calidad:</b> <b>ING. WALDO GALLEGOS GALVAN</b>	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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