

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

Número:  
Number:

22705

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Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km 24.2  
Apartado Postal 43  
(65550) C. de Flores, N.L. Méx.  
(52) 81 8305 9600 tel  
(52) 81 8305 9620 fax

Vendido a: Sold to:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	6857	Lista de Empaque: Packing List:	11576	Fecha/Date:	17 de Agosto de 2009
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234 WPB-04, 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 - 2003 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	S48650	30	CODO 2 1/2 X 90° R.L. CED-STD	326	499	31	117					
2	S21171	10	CODO 2 1/2 X 90° R.L. CED-STD	327	500	31	116					
3	S32307	27	CODO 2 1/2 X 90° R.L. CED-STD	314	486	31	122					
4	S33739	1	CODO 2 1/2 X 90° R.L. CED-STD	322	491	31	120					
5	T41977	1	CODO 12 X 45° CED-STD	323	492	36	107					
6	T42340	8	CODO 12 X 45° CED-STD	321	492	42	118					
7	T20345	25	CODO 1 X 90° R.L. CED-STD	344	500	49	118					
8	R71005	143	CODO 1 X 90° R.L. CED-STD	329	462	46	110					
9	S31050	80	CODO 1 1/4 X 90° R.L. CED-STD	367	534	32	130					
10	T41224	50	RED. CONC. 6 X 4 CED-STD	317	487	36	112					
11	T41415	4	TEE RED. 10 X 6 CED-STD	318	495	33	124					

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	S48650	48650	0.330	0.190	0.750	0.010	0.001	0.290	0.040	0.037	0.010	0.028	0.001	0.000
HF	S21171	21171	0.310	0.180	0.740	0.010	0.001	0.290	0.010	0.018	0.010	0.010	0.001	0.002
HF	S32307	32307	0.330	0.190	0.710	0.012	0.002	0.260	0.050	0.039	0.010	0.028	0.001	0.001
HF	S33739	33739	0.340	0.200	0.740	0.008	0.001	0.280	0.040	0.032	0.010	0.017	0.001	0.002
HF	T41977	41977	0.300	0.170	0.680	0.010	0.002	0.280	0.050	0.044	0.006	0.020	0.000	0.000
HF	T42340	42340	0.300	0.170	0.670	0.011	0.003	0.280	0.050	0.065	0.007	0.030	0.000	0.000
HF	T20345	20345	0.340	0.169	0.900	0.010	0.002	0.250	0.044	0.021	0.033	0.025	0.000	0.000
HF	R71005	71005	0.310	0.170	0.720	0.009	0.002	0.210	0.050	0.018	0.018	0.080	0.001	0.001
HF	S31050	31050	0.330	0.190	0.760	0.007	0.002	0.270	0.030	0.023	0.010	0.013	0.001	0.000
CF	T41224	41224	0.310	0.180	0.670	0.014	0.002	0.280	0.050	0.056	0.017	0.030	0.000	0.000
HF	T41415	41415	0.320	0.190	0.740	0.009	0.002	0.300	0.020	0.047	0.010	0.020	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°: 354006 369597 468317 480022 8066903 9002777 0 2270324 457348 8048841 8068955

"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

*Waldo Gallegos*  
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.