



Tubos de Acero de México, S.A.
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**CERTIFICADO DE CALIDAD
 INSPECTION CERTIFICATE
 (DIN EN 10204:2004E - ISO 10474 3.1.B)**

Numero:
Number:

25032

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:	11409 - 10963 - 11325 -	Lista de Empaque: Packing List:	12918	Fecha/Date:	24 de Octubre de 2011
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 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	T56078	200	CODO 6 X 90° R.L. CED-STD.	316	482	39	116					
2	S46244	100	CODO 2 X 90° R.L. CED-STD	281	475	30	107					
3	S46666	30	CODO 5 X 90° R.L. CED-XS	295	467	40	135					
4	T51581	10	TEE 10 CED-80	306	495	48	120					
5	T52744	30	CODO 3 X 45° CED-XS	343	490	37	124					
6	S26168	50	CODO 2 1/2 X 90° R.L. CED-XS	264	473	37	126					
7	S45796	40	CODO 4 X 45° CED-XS	310	488	33	145					
8	S46244	50	CODO 2 X 90° R.C. CED-STD	281	475	30	107					
9	S31802	20	CODO 1 1/4 X 45° CED-XS	369	523	50	133					

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	T56078	56078	0.300	0.170	0.680	0.013	0.001	0.270	0.050	0.046	0.011	0.030	0.000	0.000
HF	S46244	46244	0.330	0.190	0.740	0.012	0.000	0.290	0.050	0.035	0.020	0.020	0.002	0.002
HF	S46666	46666	0.320	0.180	0.750	0.009	0.002	0.290	0.040	0.037	0.020	0.020	0.001	0.002
HF	T51581	51581	0.350	0.190	0.850	0.009	0.001	0.300	0.050	0.066	0.016	0.040	0.000	0.000
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
HF	S26168	26168	0.325	0.180	0.810	0.008	0.001	0.290	0.020	0.038	0.010	0.019	0.001	0.001
HF	S45796	45796	0.350	0.200	0.770	0.013	0.000	0.290	0.050	0.032	0.020	0.015	0.001	0.002
HF	S46244	46244	0.330	0.190	0.740	0.012	0.000	0.290	0.050	0.035	0.020	0.020	0.002	0.002
HF	S31802	31802	0.320	0.180	0.770	0.009	0.002	0.330	0.030	0.034	0.010	0.014	0.001	0.001

Certificamos que los resultados de los Analisis 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°:
 11040392 598998 11041217 10049053 11012176 165677
 11030471 598998 207944
 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 80.
 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 80.