

**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**

(DIN EN 10204:2004E - ISO 10474 3.1.B)

Tubos de Acero de México, S.A.
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Vendido a:	PLESA ANAHUAC Y CIA. S. A. DE C. V.	Pedido del Cliente No:	3508
Sold to:	Plasticas y Grados / Specification and Steel Grade	Customers Order No:	
Seamless Fittings according to ASTM A 234" M" WPB-97, A234" M" WPB-05a, NACE MR 01.75-2003		Dimensiones y tolerancias / Dimension and tolerances	
Conform to ASME II Ed. 2001 ASME SA-234" M", Grade WPB.		ASME B 16.9 - 2003 and ASME B 16.28 - 1994	
Numero:	18905	Fecha/Date:	5 de Octubre de 2007
Numero:	18905	Packing List:	
Numero:	18905	Factura/Invoice:	9729
Numero:	18905	Bocas / Ends	
Numero:	18905	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 HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S21713	456	CODO 4 X 90° R. L. CED-STD	298	471	31	110					
2	S21173	264	CODO 3 X 90° R. L. CED-STD	335	482	37	121					
3	T34691	200	CODO 6 X 90° R. L. CED-STD	307	483	38	120					
4	T34826	6	TEE 8 CED-STD	315	491	44	93					
5	T35794	10	TEE 8 CED-STD	311	488	35	87					
6	T24282	2	CODO 4 X 45° CED-STD	350	484	41	122					
7	S37918	5	CODO 4 X 45° CED-STD	347	493	40	111					
8	S37919	1	CODO 4 X 45° CED-STD	351	492	40	113					
9	S21042	9	CODO 4 X 45° CED-STD	303	481	32	110					
10	S22096	61	CODO 4 X 45° CED-STD	347	490	36	112					
11	S20250	4	CODO 4 X 45° CED-STD	296	474	34	110					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S21713	21713	0.320	0.190	0.700	0.013	0.001	0.250	0.040	0.041	0.010	0.022	0.001	0.001
HF	S21173	21173	0.330	0.200	0.720	0.010	0.004	0.270	0.020	0.016	0.010	0.016	0.001	0.001
HF	T34691	34691	0.310	0.170	0.680	0.006	0.002	0.280	0.050	0.081	0.025	0.040	0.000	0.000
HF	T34826	34826	0.330	0.180	0.750	0.009	0.003	0.270	0.050	0.085	0.048	0.040	0.010	0.000
HF	T35794	35794	0.330	0.190	0.700	0.013	0.001	0.280	0.040	0.080	0.024	0.040	0.000	0.000
HF	T24282	24282	0.310	0.170	0.700	0.008	0.001	0.280	0.050	0.071	0.034	0.030	0.000	0.000
HF	S37918	37918	0.345	0.200	0.710	0.010	0.001	0.300	0.050	0.072	0.030	0.090	0.001	0.001
HF	S37919	37919	0.324	0.180	0.730	0.014	0.001	0.310	0.050	0.063	0.020	0.066	0.001	0.001
HF	S21042	21042	0.330	0.190	0.750	0.010	0.001	0.280	0.050	0.024	0.020	0.031	0.001	0.001
HF	S22096	22096	0.320	0.180	0.800	0.008	0.001	0.310	0.030	0.021	0.010	0.021	0.001	0.001
HF	S20250	20250	0.300	0.170	0.720	0.009	0.001	0.290	0.030	0.027	0.010	0.030	0.001	0.000

Notes:
 Formado en caliente a 620°C-800°C, enfriado al aire; Formado en frio normalizado a 940°C max.
 Hot formed fittings in a range from 620°C to 800°C, cooled in still air.
 Cold formed normalized at 940°C max.
 Holding time 10'.
 Inspección Dimensional: Satisfactoria.
 Visual dimensional check: Satisfactory
 HF: FORMADO EN CALIENTE/HOT FORMED
 CF: FORMADO EN FRIO/COLD FORMED

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°. 373204 369592 7037598 7036267 7040871 5021213 257852 257852 369003 379771 358039

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".

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.

Jefe de Calidad:
 Quality Manager:

 ING. JOSE MARTINEZ MACIAS
 CC-008