



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:	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:	11723 - 12170	Lista de Empaque: Packing List:	13119	Fecha/Date:	7 de Febrero de 2012
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	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	S48017	264	CODO 3 X 90° R.I. CED-STD	334	508	30	104					
2	S45917	160	CODO 3 X 90° R.I. CED-XS	298	480	36	103					
3	T57394	22	CODO 8 X 45° CED-STD	313	483	39	112					
4	T57395	9	CODO 8 X 45° CED-STD	313	478	39	96					
5	T56640	9	CODO 8 X 45° CED-STD	313	464	32	98					
6	T57238	17	CODO 12 X 45° CED-STD	319	477	35	117					
7	T57483	1	CODO 12 X 45° CED-STD	328	486	37	101					
8	T58642	40	CODO 10 X 90° R.I. CED-STD	329	479	34	104					
9	T58243	10	CODO 10 X 90° R.I. CED-XS	315	494	42	126					
10	S47300	109	CODO 4 X 90° R.I. CED-XS	287	486	33	135					
11	T56077	30	CODO 4 X 90° R.C. CED-STD	337	481	38	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	S48017	48017	0.330	0.180	0.770	0.010	0.001	0.300	0.050	0.032	0.020	0.019	0.002	0.002
HF	S45917	45917	0.330	0.190	0.750	0.009	0.001	0.310	0.040	0.025	0.020	0.019	0.001	0.002
HF	T57394	57394	0.300	0.170	0.670	0.009	0.001	0.260	0.050	0.074	0.025	0.030	0.000	0.000
HF	T57395	57395	0.310	0.170	0.700	0.010	0.002	0.260	0.040	0.069	0.021	0.030	0.000	0.000
HF	T56640	56640	0.300	0.170	0.670	0.014	0.001	0.270	0.040	0.053	0.018	0.030	0.000	0.000
HF	T57238	57238	0.320	0.180	0.680	0.013	0.001	0.310	0.050	0.078	0.020	0.040	0.000	0.000
HF	T57483	57483	0.320	0.180	0.690	0.014	0.000	0.290	0.080	0.065	0.015	0.030	0.000	0.000
HF	T58642	58642	0.300	0.170	0.670	0.014	0.001	0.310	0.050	0.054	0.013	0.030	0.000	0.000
HF	T58243	58243	0.320	0.170	0.760	0.014	0.001	0.300	0.080	0.054	0.015	0.030	0.000	0.000
HF	S47300	47300	0.330	0.200	0.740	0.010	0.000	0.300	0.020	0.032	0.010	0.018	0.001	0.002
HF	T56077	56077	0.300	0.170	0.680	0.014	0.001	0.280	0.040	0.045	0.010	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°: 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°: 11058107 11044014 11048476 11052523 11040776 11045307 11054019 12004239 11061764 11045443 11039749

"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:	Notes:	 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.
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.	Hot formed fittings in a range from 620°C to 980°C, cooled in still air, Cold formed normalized at 940°C max.		
Tiempo de permanencia 10'.	Holding time 10'.		
Inspección Dimensional: Satisfactoria.	Visual dimensional check: Satisfactory		
HF: FORMADO EN CALIENTE/HOT FORMED	CF: FORMADO EN FRIO/COLD FORMED		