



CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)	Número: Number: 23039	Página/Page: 1 DE 1	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
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Vendido a: Sold to:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	7371 - 7386 - 7372 - 7301 - 7384	Lista de Empaque: Packing List:	11747	Fecha/Date: 3 de Diciembre de 2009
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234M 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	S33737	20	CODO 6 X 45° CED-XS	280	466	37	135					
2	S31159	30	CODO 6 X 90° R.C. CED-STD	308	499	36	134					
3	T42339	8	TEE 8 CED-STD	308	480	34	110					
4	T41223	12	TEE 4 CED-XS	304	477	40	120					
5	S33942	40	CODO 4 X 45° CED-STD	317	484	32	140					
6	S31052	20	CODO 2 X 90° R.L. CED-XS	326	495	31	120					
7	S32307	70	CODO 2 1/2 X 90° R.L. CED-STD	314	486	31	122					
8	T41976	9	CODO 12 X 90° R.L. CED-STD	274	482	35	97					
9	S33739	14	CODO 4 X 90° R.L. CED-XS	299	465	35	111					
10	S31762	36	CODO 4 X 90° R.L. CED-XS	254	452	33	111					
11	S22662	60	CODO 4 X 90° R.C. CED-STD	344	482	36	117					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														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°: 479806 459616 9002220 9049429 480575 458096 468319 9043739 482835 470425 383522 "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".
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	
HF	S33737	33737	0.340	0.200	0.750	0.009	0.001	0.270	0.040	0.034	0.010	0.017	0.001	0.002
HF	S31159	31159	0.340	0.200	0.760	0.014	0.001	0.270	0.040	0.046	0.010	0.014	0.001	0.001
HF	T42339	42339	0.300	0.170	0.670	0.010	0.003	0.286	0.050	0.070	0.008	0.030	0.000	0.000
HF	T41223	41223	0.300	0.170	0.660	0.013	0.002	0.260	0.050	0.071	0.013	0.030	0.000	0.000
HF	S33942	33942	0.320	0.180	0.730	0.014	0.001	0.290	0.040	0.069	0.010	0.032	0.001	0.000
HF	S31052	31052	0.330	0.190	0.740	0.010	0.001	0.260	0.040	0.056	0.010	0.020	0.001	0.001
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	T41976	41976	0.300	0.170	0.670	0.008	0.001	0.280	0.040	0.046	0.011	0.030	0.000	0.000
HF	S33739	33739	0.340	0.200	0.740	0.010	0.001	0.290	0.040	0.038	0.010	0.017	0.001	0.000
HF	S31762	31762	0.320	0.180	0.740	0.012	0.001	0.290	0.050	0.023	0.010	0.021	0.001	0.000
HF	S22662	22662	0.300	0.170	0.700	0.011	0.001	0.260	0.050	0.030	0.010	0.022	0.001	0.002

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 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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