



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)	Número: Number: 23052	Página/Page: 1 DE 1
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 7413 - 7325 - 7414 - 7371	Lista de Empaque: Packing List: 11756	Fecha/Date: 15 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	6	CODO 6 X 45° CED-XS	280	466	37	135					
2	S33738	31	CODO 6 X 90° R.L. CED-STD.	315	469	36	107					
3	T42101	13	CODO 6 X 90° R.L. CED-STD.	263	504	33	107					
4	T43299	2	CODO 6 X 90° R.L. CED-STD.	325	490	38	122					
5	T42774	4	CODO 6 X 90° R.L. CED-STD.	320	482	41	118					
6	T42339	8	TEE 8 CED-STD	308	480	34	110					
7	S33942	20	CODO 4 X 45° CED-STD	317	484	32	140					
8	S31052	100	CODO 2 X 90° R.L. CED-STD	321	477	30	118					
9	S31681	8	CODO 2 X 90° R.L. CED-STD	327	493	31	118					
10	S33368	92	CODO 2 X 90° R.L. CED-STD	335	500	30	128					
11	T43468	30	RED. CONC. 8 X 6 CED-STD	297	472	41	116					

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 479795 8057758 9010384 9047601 9007700 480575 479030 479030 479030 9012764 "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	S33738	33738	0.320	0.180	0.750	0.011	0.001	0.280	0.020	0.049	0.010	0.014	0.001	0.001
HF	T42101	42101	0.290	0.160	0.680	0.008	0.001	0.280	0.050	0.045	0.015	0.030	0.000	0.000
HF	T43299	43299	0.330	0.180	0.760	0.011	0.001	0.270	0.050	0.061	0.015	0.040	0.000	0.000
HF	T42774	42774	0.310	0.180	0.670	0.015	0.001	0.270	0.040	0.072	0.025	0.030	0.000	0.000
HF	T42339	42339	0.310	0.180	0.650	0.011	0.003	0.260	0.040	0.078	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	0.320	0.180	0.730	0.010	0.001	0.250	0.040	0.051	0.010	0.020	0.001	0.001
HF	S31681	31681	0.320	0.190	0.720	0.008	0.001	0.260	0.030	0.018	0.010	0.017	0.001	0.002
HF	S33368	33368	0.350	0.200	0.800	0.011	0.002	0.270	0.030	0.039	0.010	0.022	0.001	0.002
CF	T43468	43468	0.300	0.170	0.680	0.017	0.003	0.290	0.050	0.049	0.012	0.030	0.000	0.000

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	<p style="font-size: 2em; font-family: cursive;">Waldo Gallegos</p> Quality Manager / Jefe de Calidad: ING. WALDO GALLEGOS GALVAN
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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.