



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:	Página/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:	7205	Lista de Empaque: Packing List:	11682	Fecha/Date:	28 de Octubre 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	S29992	20	CODO 6 X 90° R.C. CED-STD	323	473	34	94					
2	S45279	11	CODO 3 X 90° R.L. CED-XS	264	462	36	105					
3	S31681	16	CODO 3 X 90° R.L. CED-XS	273	443	33	109					
4	S33571	8	CODO 3 X 90° R.L. CED-XS	296	473	32	130					
5	S32706	3	CODO 3 X 90° R.L. CED-XS	336	480	35	109					
6	S31050	59	CODO 3 X 90° R.L. CED-XS	306	481	33	130					
7	S29506	8	CODO 3 X 90° R.L. CED-XS	313	484	32	127					
8	S31052	40	CODO 2 X 90° R.L. CED-XS	326	495	31	120					
9	S31051	100	CODO 2 X 90° R.L. CED-STD	333	501	30	118					
10	T42773	60	CODO 8 X 90° R.L. CED-STD	365	494	34	106					
11	S45664	9	CODO 2 X 90° R.C. CED-XS	309	496	34	122					

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°: 448604 347507 461066 478915 470998 457078 449028 458096 458124 9002848 321672 "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	S29992	29992	0.330	0.180	0.820	0.015	0.002	0.290	0.050	0.040	0.010	0.020	0.001	0.000
HF	S45279	45279	0.320	0.180	0.730	0.010	0.001	0.300	0.050	0.055	0.020	0.048	0.001	0.002
HF	S31681	31681	0.320	0.190	0.730	0.007	0.001	0.260	0.020	0.020	0.010	0.022	0.001	0.001
HF	S33571	33571	0.330	0.200	0.710	0.008	0.003	0.300	0.030	0.026	0.010	0.002	0.001	0.000
HF	S32706	32706	0.320	0.180	0.770	0.010	0.001	0.300	0.040	0.045	0.010	0.026	0.001	0.000
HF	S31050	31050	0.340	0.200	0.780	0.001	0.001	0.280	0.030	0.027	0.010	0.013	0.001	0.000
HF	S29506	29506	0.340	0.200	0.720	0.007	0.001	0.300	0.040	0.049	0.030	0.030	0.003	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	S31051	31051	0.320	0.190	0.730	0.009	0.001	0.260	0.030	0.025	0.010	0.012	0.001	0.001
HF	T42773	42773	0.310	0.180	0.670	0.016	0.001	0.260	0.040	0.071	0.023	0.030	0.000	0.000
HF	S45664	45664	0.340	0.200	0.770	0.010	0.001	0.300	0.030	0.022	0.020	0.017	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.		