



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE
(DIN EN 10204:2004E - ISO 10474 3.1.B)**

Número:
Number:

22793

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Tubos de Acero de México, S.A.
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Apartado Postal 43
(65550) C. de Flores, N.L. Méx.
(52) 81 8305 9600 tel
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Vendido a: Sold to:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	6973 - 6857	Lista de Empaque: Packing List:	11619	Fecha/Date:	22 de Septiembre 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	S28891	267	CODO 4 X 90° R.L. CED-STD	495	762	32	117					
2	S30232	264	CODO 3 X 90° R.L. CED-STD	253	446	30	111					
3	T45662	55	TEE 4 CED-STD	335	502	40	122					
4	T42340	8	CODO 12 X 45° CED-STD	321	492	42	118					
5	T41976	2	CODO 12 X 45° CED-STD	274	482	35	97					
6	S38031	20	CODO 5 X 90° R.L. CED-XS	334	492	35	112					
7	T34881	2	TEE 6 CED-STD	366	499	32	86					
8	T36286	1	TEE 6 CED-STD	385	508	37	90					
9	T39645	1	TEE 6 CED-STD	309	522	35	97					
10	T37091	2	TEE 6 CED-STD	317	491	33	86					
11	T41827	15	TEE 6 CED-STD	266	465	36	100					

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°. 450995 460632 9047595 9002777 8066875 257247 7037525 7045937 8027219 7056360 8059866 "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	%Nb	
HF	S28891	28891	0.320	0.180	0.730	0.011	0.003	0.260	0.040	0.024	0.010	0.028	0.001	0.000	
HF	S30232	30232	0.350	0.200	0.830	0.014	0.002	0.280	0.050	0.037	0.010	0.021	0.001	0.002	
HF	T45662	45662	0.310	0.180	0.670	0.015	0.003	0.280	0.040	0.057	0.023	0.030	0.000	0.000	
HF	T42340	42340	0.300	0.170	0.670	0.011	0.003	0.280	0.050	0.065	0.007	0.030	0.000	0.000	
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	S38031	38031	0.322	0.190	0.730	0.011	0.001	0.280	0.020	0.037	0.010	0.018	0.001	0.001	
HF	T34881	34881	0.300	0.160	0.670	0.010	0.003	0.270	0.060	0.096	0.045	0.040	0.000	0.000	
HF	T36286	36286	0.350	0.180	0.850	0.013	0.001	0.280	0.060	0.068	0.030	0.030	0.000	0.000	
HF	T39645	39645	0.300	0.170	0.670	0.009	0.001	0.280	0.050	0.047	0.008	0.030	0.000	0.000	
HF	T37091	37091	0.310	0.180	0.670	0.006	0.001	0.280	0.050	0.054	0.018	0.030	0.000	0.000	
HF	T41827	41827	0.310	0.170	0.670	0.011	0.001	0.280	0.060	0.065	0.032	0.040	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	 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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