



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

CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)		Numero: Number:	21612	Page/Page:	1 DE 1
Vendido a: Sold to:	TUVANSA MONTERREY	Pedido del Cliente No: Customers Order No:	4157	Lista de Empaque: Packing List:	11048
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234"M" WPB-07, A234"M" WPB-05a, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234"M", 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	S31625	528	CODO 3 X 90° R.I. CED-STD	331	510	32	124					
2	T40156	10	TEE 8 CED-XS	250	464	34	116					
3	T39958	15	TEE 6 CED-XS	297	484	33	120					
4	T41644	36	CODO 12 X 45° CED-STD	306	471	34	98					
5	S21712	312	CODO 4 X 90° R.C. CED-STD	324	470	39	112					
6	S22176	48	CODO 4 X 90° R.C. CED-STD	286	464	36	145					
7	S23751	20	RED. CONC. 2 X 1 CED-STD	345	511	29	120					
8	S31050	350	CODO 1 1/4 X 90° R.I. CED-STD	368	534	32	157					
9	S23751	30	RED. CONC. 2 X 1 1/2 CED-STD	345	511	29	120					
10	T41487	15	CODO 10 X 90° R.I. CED-80	280	475	46	118					
11	S29992	50	RED. CONC. 4 X 3 CED-XS	295	468	35	121					

ANALISIS QUIMICO / CHEMICAL ANALYSIS															Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tuberia 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°: 460632 8054201 8041985 8059552 373284 378589 412884 457348 412884 8052905 448604 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	S31625	31625	0.310	0.170	0.750	0.012	0.002	0.260	0.040	0.034	0.010	0.016	0.001	0.001	
HF	T40156	40156	0.310	0.180	0.690	0.010	0.001	0.290	0.040	0.049	0.006	0.030	0.000	0.000	
HF	T39958	39958	0.300	0.170	0.670	0.010	0.002	0.260	0.050	0.058	0.007	0.030	0.000	0.000	
HF	T41644	41644	0.300	0.170	0.660	0.013	0.001	0.280	0.050	0.051	0.009	0.030	0.000	0.000	
HF	S21712	21712	0.320	0.190	0.720	0.012	0.001	0.250	0.040	0.041	0.010	0.023	0.001	0.001	
HF	S22176	22176	0.310	0.180	0.720	0.008	0.001	0.310	0.030	0.008	0.010	0.010	0.001	0.002	
CF	S23751	23751	0.340	0.180	0.800	0.009	0.001	0.300	0.060	0.040	0.030	0.025	0.001	0.002	
HF	S31050	31050	0.330	0.190	0.760	0.007	0.002	0.270	0.030	0.023	0.010	0.013	0.001	0.000	
CF	S23751	23751	0.340	0.180	0.800	0.009	0.001	0.300	0.060	0.040	0.030	0.025	0.001	0.002	
HF	T41487	41487	0.310	0.180	0.670	0.011	0.001	0.290	0.040	0.056	0.007	0.030	0.000	0.000	
CF	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	

<p>Notas:</p> <p>Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.</p> <p>Timepo de permanencia 10'.</p> <p>Inspección Dimensional: Satisfactoria.</p> <p>HF: FORMADO EN CALIENTE/HOT FORMED</p>	<p>Notas:</p> <p>Hot formed fittings in a range from 620°C to 980°C, cooled in air.</p> <p>Cold formed normalized at 940°C max.</p> <p>Holding time 10'.</p> <p>Visual dimensional check: Satisfactory</p> <p>CF: FORMADO EN FRIO/COLD FORMED</p>	<p>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.</p> <p>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.</p>
<p>Quality Manager / Jefe de Calidad:</p> <p>ING. WALDO GALLEGOS GALVAN</p>		<p>CC-008</p>