



Tubos de Acero de México, S.A.  
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<b>CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE</b> ( DIN EN 10204:2004E - ISO 10474 3.1.B )		Numero: Number: 24535	Pagina/Page: 1 DE 1
Vendido a: Sold to: TUVANSA MONTEPREY	Pedido del Cliente No: Customers Order No: 10085 - 10118 -	Lista de Empaque: Packing List: 12676	Fecha/Date: 19 de Mayo de 2011
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MRD103-2003	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	S43735	229	CODO 2 X 45° CED-STD	351	504	30	126					
2	T52716	144	CODO 10 X 45° CED-STD	320	492	40	122					
3	T54644	25	RED CONC. 10 X 6 CED-STD	315	488	38	120					
4	T51542	20	CODO 12 X 90° R.L. CED-40	311	486	40	120					
5	T47856	16	CODO 12 X 90° R.L. CED-40	305	481	43	116					
6	T49586	3	RED. CONC. 16 X 6 CED-STD	367	497	44	120					
7	T52716	13	CODO 10 X 90° R.L. CED-80	290	475	44	120					
8	T51982	24	CODO 16 X 90° R.L. CED-80	307	491	44	126					
9	S32803	41	RED CONC. 4 X 2 CED-XS	285	477	35	130					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
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	S43735	42735	0.310	0.180	0.720	0.011	0.001	0.270	0.020	0.020	0.010	0.013	0.002	0.002
HF	T52716	52716	0.320	0.180	0.680	0.010	0.002	0.300	0.040	0.072	0.028	0.050	0.000	0.000
CF	T54644	54644	0.310	0.180	0.670	0.007	0.003	0.280	0.050	0.072	0.023	0.050	0.000	0.000
HF	T51542	51542	0.330	0.190	0.720	0.010	0.002	0.270	0.040	0.059	0.018	0.030	0.000	0.000
HF	T47856	47856	0.320	0.170	0.790	0.007	0.001	0.290	0.040	0.080	0.025	0.030	0.000	0.000
CF	T49586	49586	0.310	0.180	0.670	0.013	0.004	0.290	0.040	0.065	0.030	0.040	0.000	0.000
HF	T52716	52716	0.310	0.180	0.660	0.009	0.001	0.290	0.040	0.072	0.028	0.050	0.000	0.000
HF	T51982	51982	0.350	0.190	0.840	0.012	0.002	0.270	0.040	0.080	0.041	0.040	0.000	0.000
CF	S32803	32803	0.340	0.200	0.740	0.014	0.000	0.280	0.040	0.044	0.010	0.032	0.001	0.000

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 al 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) certa conform to ASTM A106 Grade B N°.

11004276 10060272 11016577 10063613 10016506 10026128  
10059871 10060261 471435

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.

<p>Notas:</p> <p>Formado en caliente a 620°C-960°C, enfriado al aire. Formado in fire normalizado a 940°C max.</p> <p>Tiempo 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 960°C, cooled in still air.</p> <p>Cold formed normalizing at 940°C max.</p> <p>Holding time 10'.</p> <p>Visual dimensional check: Satisfactory</p> <p>CF: FORMADO EN FRIJO/COLD FORMED</p>	<p>Quality Manager/Jefe de Calidad: ING. WALDO GALLEGOS GALVAN</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>CC-008</p>
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