



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)		Numero: Number:	Pagina/Page:
		24515	1 DE 1
Vendido a: Sold to:	TUVANSA MONTERREY	Pedido del Cliente No. Customers Order No.	10085 - 10246 - 10230
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 0175-2005 Conform to ASME II Ed. 2001 ASME SA-234 Grade WPB, NACE MR0103-2003		Lista de Empaque: Packing List:	1 2 6 2 7
Dimensiones y tolerancias / Dimension and tolerances		Fecha/Date:	15 de Abril de 2011
		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	S28130	80	CODE 1 1/2 X 90° R.I. CED-XS	358	524	34	130					
2	T62716	62	TEE RED. 6 X 3 CED-STD	320	492	40	122					
3	T48739	48	TEE RED. 6 X 3 CED-STD	303	478	40	98					
4	T49306	10	RED. CONC. 5 X 3 CED-XS	302	480	42	118					
5	T51561	8	TEE RED. 1.2 X 6 CED-STD	327	504	42	123					
6	T51071	10	TEE RED. 1.2 X 6 CED-STD	308	456	46	124					
7	T51816	10	CODE 6 X 90° R.I. CED-20	328	494	39	122					
8	T33541	1	RED. CONC. 16 X 14 CED-XS	309	476	37	95					
9	T46079	1	RED. CONC. 16 X 14 CED-XS	276	464	37	121					
10	S33368	20	CODE 2 X 180° R.I. CED-XS	320	499	32	126					
11	S42716	601	CODE 2 1/2 X 90° R.C. CED-YS	298	463	35	100					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.F./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%NB
HF	S38130	38130	0.313	0.180	0.710	0.009	0.001	0.280	0.020	0.043	0.020	0.022	0.001	0.001
HF	T52716	52716	0.320	0.190	0.480	0.010	0.002	0.300	0.040	0.072	0.028	0.050	0.000	0.000
HF	T48739	48739	0.300	0.180	0.660	0.011	0.002	0.290	0.030	0.053	0.019	0.030	0.000	0.000
CF	T49306	49306	0.300	0.170	0.570	0.012	0.001	0.270	0.030	0.056	0.017	0.030	0.000	0.000
HF	T51561	51561	0.350	0.190	0.860	0.009	0.001	0.300	0.050	0.057	0.016	0.040	0.000	0.000
HF	T51071	51071	0.350	0.190	0.670	0.012	0.002	0.290	0.040	0.075	0.022	0.040	0.000	0.000
HF	T51816	51816	0.320	0.180	0.720	0.009	0.002	0.310	0.040	0.059	0.027	0.040	0.000	0.000
CF	T33541	33541	0.310	0.170	0.560	0.012	0.002	0.280	0.070	0.052	0.032	0.030	0.000	0.000
CF	T46079	46079	0.328	0.180	0.450	0.015	0.003	0.250	0.060	0.071	0.029	0.050	0.000	0.000
HF	S33368	33368	0.340	0.190	0.820	0.013	0.002	0.270	0.030	0.044	0.010	0.021	0.001	0.000
HF	S42716	42716	0.302	0.170	0.720	0.009	0.001	0.300	0.030	0.032	0.020	0.016	0.001	0.000

Certificamos que los resultados de los Análisis Químicos y Pruebas Mecánicas son verdaderos a una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima (Tubería Sin Costura) conforme ASTM A106 Grade 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°
258830 10060272 10027098 10040717 10089762 10047222 10047435 7334824 10006095 479561 306032
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>Notes:</p> <p>Formado en caliente a 620°C/660°C, enfriado al aire. Hot formed fittings at a temp 620°C to 660°C, cooled in air.</p> <p>Formado en frío normalizado a 640°C max. Cold formed normalized at 240°C max.</p> <p>Flanjes de permeación 10. Welding class 10.</p> <p>Inspección Dimensional: Satisfactoria. Visual dimensional check: Satisfactory</p> <p>HF: FORMADO EN CALIENTE/HOT FORMED CF: FORMADO EN FRIO/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.</p>
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