



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:
		24669	1
Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	5996 - 5960
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 MR0103-2003		Lista de Empaque: Packing List:	12726
		Fecha/Date:	22 de Junio de 2011
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	T54399	150	CODO 6 X 45° CED-XS	298	465	44	122					
2	T54867	288	CODO 6 X 45° CED-STD	316	482	38	122					
3	T54537	2	CODO 6 X 45° CED-STD	316	480	39	120					
4	T51306	3	CODO 14 X 45° CED-STD	327	486	42	118					
5	T51306	13	CODO 14 X 45° CED-STD	322	486	42	120					
6	T50879	189	CODO 8 X 90° R.L. CED-XS	296	482	44	91					
7	T50508	5	CODO 8 X 90° R.L. CED-XS	294	482	44	109					
8	T51345	6	CODO 8 X 90° R.L. CED-XS	298	477	44	126					
9	S22920	200	RED. CONC. 4 X 3 CED-STD	292	467	35	125					
10	T51525	2	TEE RED. 10 X 4 CED-STD	322	483	31	112					
11	T52935	18	TEE RED. 10 X 4 CED-STD	318	479	43	120					

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	T54399	54399	0.300	0.170	0.690	0.009	0.001	0.280	0.050	0.067	0.016	0.030	0.000	0.000
HF	T54867	54867	0.310	0.180	0.670	0.006	0.001	0.290	0.040	0.056	0.013	0.030	0.000	0.000
HF	T54537	54537	0.320	0.180	0.690	0.009	0.001	0.320	0.050	0.061	0.020	0.030	0.000	0.000
HF	T51306	51306	0.300	0.170	0.660	0.012	0.001	0.260	0.040	0.051	0.022	0.038	0.000	0.000
HF	T51306	51306	0.300	0.170	0.660	0.011	0.001	0.260	0.050	0.060	0.028	0.030	0.000	0.000
HF	T50879	50879	0.310	0.180	0.660	0.014	0.002	0.290	0.040	0.049	0.014	0.030	0.000	0.000
HF	T50508	50508	0.310	0.170	0.690	0.010	0.002	0.260	0.060	0.072	0.023	0.030	0.000	0.000
HF	T51345	51345	0.310	0.170	0.700	0.012	0.001	0.290	0.060	0.060	0.017	0.030	0.000	0.000
CF	S22920	22920	0.310	0.180	0.730	0.011	0.002	0.290	0.030	0.033	0.010	0.001	0.001	0.002
BF	T51525	51525	0.310	0.190	0.670	0.014	0.003	0.270	0.040	0.058	0.015	0.030	0.000	0.000
BF	T52935	52935	0.310	0.180	0.690	0.006	0.001	0.260	0.040	0.063	0.016	0.040	0.000	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 el proveedor de Materia Prima (Tuberia Sin Costura) conforme ASTM A106 Grado B con N°: 11019821 11021932 11024537 10041527 10041495 10051538 10043912 10048785 386722 10053790 11018486

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) cars conform to ASTM A106 Grade B N°: 11019821 11021932 11024537 10041527 10041495 10051538 10043912 10048785 386722 10053790 11018486

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>For Drilled: 620°C - 980°C, annealed or cold formed normalized at 940°C max.</p> <p>Holding time 10'.</p> <p>Check dimensional: Satisfactory.</p> <p>FORMADO EN CALIENTE/HEAT FORMED.</p>	<p>Notes:</p> <p>For Drilled: 620°C - 980°C, annealed or cold formed normalized at 940°C max.</p> <p>Holding time 10'.</p> <p>Check dimensional: Satisfactory.</p> <p>FORMADO EN FRIOCOLD FORMED.</p>	<p>Quality Management / Gestión de Calidad:</p> <p>ING. WALDO CALLEJOS 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 are obtained 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>
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