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 9630 fax.

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

Numero: Number:	Pagina/Page:
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Vendido a: Sold to: ETISA DE GUADALAJARA SA. DE CV.	Pedido del Cliente No: Customers Order No: GDL-89399	Lista de Empaque: Packing List: 12921	Fecha/Date: 24 de Octubre 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 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	T50879	150	CODO 3 X 90° R.L. CED-STD	353	498	35	122					
2	T53775	50	TEE 4 CED-STD	300	471	39	122					
3	S45279	2	CODO 3 X 90° R.L. CED-XS	264	462	36	105					
4	S33571	5	CODO 3 X 90° R.L. CED-XS	296	473	32	130					
5	S31050	1	CODO 3 X 90° R.L. CED-XS	306	481	33	130					
6	S32706	1	CODO 3 X 90° R.L. CED-XS	336	480	35	109					
7	S42895	12	CODO 3 X 90° R.L. CED-XS	314	485	34	128					
8	T56126	10	RED. CONC. 10 X 8 CED-STD	305	482	41	120					
9	T56718	40	CODO 10 X 90° R.L. CED-STD	304	483	41	118					
10	S45917	500	CODO 1 1/2 X 90° R.L. CED-STD.	391	546	45	151					
11	T56077	20	RED. CONC. 4 X 3 CED-STD	313	476	40	118					

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	T50879	50879	0.310	0.180	0.660	0.014	0.001	0.300	0.040	0.048	0.013	0.030	0.000	0.000
HF	T53775	53775	0.320	0.180	0.680	0.010	0.000	0.290	0.060	0.058	0.028	0.030	0.000	0.000
HF	S45279	45279	0.320	0.180	0.730	0.010	0.001	0.300	0.050	0.055	0.020	0.048	0.001	0.002
HF	S33571	33571	0.330	0.200	0.710	0.008	0.003	0.300	0.030	0.026	0.010	0.002	0.001	0.000
HF	S31050	31050	0.340	0.200	0.780	0.001	0.001	0.280	0.030	0.027	0.010	0.013	0.001	0.000
HF	S32706	32706	0.320	0.180	0.770	0.010	0.001	0.300	0.040	0.045	0.010	0.026	0.001	0.000
HF	S42895	42895	0.320	0.190	0.730	0.012	0.002	0.300	0.030	0.016	0.010	0.015	0.003	0.002
CF	T56126	56126	0.300	0.170	0.680	0.009	0.001	0.270	0.050	0.058	0.017	0.030	0.000	0.000
HF	T56718	56718	0.300	0.170	0.670	0.010	0.001	0.270	0.040	0.076	0.016	0.030	0.000	0.000
HF	S45917	45917	0.320	0.180	0.740	0.010	0.001	0.310	0.040	0.024	0.020	0.018	0.001	0.002
CF	T56077	56077	0.300	0.170	0.680	0.013	0.000	0.280	0.040	0.045	0.009	0.030	0.000	0.000

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 Nº:
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 suplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B Nº:

10055648 11039142 7011277 478915 457078 470998
10060215 11033200 11042071 11026673 11035961

"Este material cumple con los requerimientos especificados en la orden".
"The material of this certificate heat number mentioned above is in compilance with the requirements specified in the order".

Notas:	Notes:
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.	Hot formed fittings in a range from 620°C to 980°C, cooled in still air. Cold formed nomalized at 940°C max.
Tiempo de permanencia 10'.	Holding time 10'.
Inspección Dimensional: Satisfactoria.	Visual dimensional check: Satisfactory
HF: FORMADO EN CALIENTE/HOT FORMED	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.

CC-008