



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

Numero:
Number: 21073

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Tabbs 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
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Vendido a: Sold to: TUVANSA MONTERREY	Pedido del Cliente No: Customers Order No: 4157 - 5390	Lista de Empaque: Packing List: 10847	Fecha/Date: 22 de Septiembre de 2008
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234"M" WPB-97, 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 - 2003 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	T39958	30	RED. CONC. 8 X 4 CED-STD	319	487	43	117					
2	S29078	100	CODO 3 X 45° CED-STD	313	492	31	111					
3	S29143	150	CODO 2 X 90° R.L. CED-XS	336	504	30	101					
4	T39319	30	CODO 12 X 90° R.L. CED-STD	318	486	46	126					
5	T39855	6	CODO 12 X 90° R.L. CED-STD	314	475	35	111					
6	S22096	100	RED. CONC 3 X 2 CED-STD	303	479	32	139					
7	T26676	2	RED. CONC. 12 X 10 CED-80	310	474	48	117					
8	T40183	20	RED. CONC. 6 X 5 CED-STD	318	488	36	109					
9	S45280	120	CODO 3 X 90° R.C. CED-XS	323	485	35	123					
10	S27721	120	RED. CONC 4 X 3 CED-STD	288	473	33	105					
11	T38887	36	RED. CONC. 6 X 3 CED-STD	291	460	42	98					

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
CF	T39958	39958	0.310	0.180	0.670	0.009	0.002	0.270	0.050	0.058	0.007	0.030	0.000	0.000
HF	S29078	29078	0.320	0.190	0.710	0.010	0.002	0.260	0.040	0.035	0.010	0.017	0.001	0.000
HF	S29143	29143	0.330	0.190	0.740	0.008	0.002	0.280	0.040	0.031	0.030	0.024	0.001	0.000
HF	T39319	39319	0.300	0.180	0.670	0.008	0.001	0.280	0.030	0.048	0.009	0.030	0.000	0.000
HF	T39855	39855	0.290	0.160	0.680	0.011	0.001	0.270	0.040	0.056	0.008	0.030	0.000	0.000
CF	S22096	22096	0.320	0.180	0.790	0.007	0.001	0.310	0.030	0.021	0.010	0.020	0.001	0.001
CF	T26676	26676	0.310	0.170	0.690	0.011	0.003	0.290	0.060	0.065	0.021	0.040	0.000	0.000
CF	T40183	40183	0.300	0.170	0.670	0.011	0.002	0.260	0.070	0.066	0.010	0.030	0.000	0.000
HF	S45280	45280	0.330	0.180	0.780	0.011	0.003	0.280	0.040	0.048	0.030	0.046	0.001	0.001
CF	S27721	27721	0.340	0.200	0.740	0.011	0.001	0.290	0.040	0.050	0.010	0.027	0.001	0.002
CF	T38887	38887	0.290	0.160	0.660	0.010	0.002	0.280	0.060	0.050	0.018	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 Matena Prima (Tuberia Sin Costura) conforme ASTM A106 Grado B con N°: 8040184 440948 447292 8049452 3049486 378357 6002710 8037445 316357 434116 8018866

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°: 8040184 440948 447292 8049452 3049486 378357 6002710 8037445 316357 434116 8018866

"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".

Notas:
Formado en caliente a 920°C-980°C, enfriado al aire; Formado en frio normalizado a 940°C max.
Tiempo de permanencia 10'.
Inspección Dimensional: Satisfactoria.
HF: FORMADO EN CALIENTE/HOT FORMED

Notas:
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
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 specifications 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.