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.

Tenaris

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

Numero: Number:	Pagina/Page:
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Vendido a: TUVANSA MONTERREY Sold to:	Pedido del Cliente No: 10118 - 10085 - 10888 - 10753 Customers Order No:	Lista de Empaque: 12806 Packing List:	Fecha/Date: 11 de Agosto 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	S44010	680	CODO 4 X 90° R.L. CED-STD	328	489	31	137					
2	S42775	66	CODO 4 X 90° R.L. CED-STD	325	505	33	140					
3	S42774	456	CODO 4 X 90° R.L. CED-STD	325	505	33	140					
4	S43735	1463	CODO 2 X 90° R.L. CED-STD	351	504	30	126					
5	T51071	36	TEE 10 CED-20	318	494	43	126					
6	S45917	3200	CODO 1 1/2 X 90° R.L. CED-STD	391	546	45	151					
7	S38130	972	CODO 1 1/4 X 90° R.L. CED-STD	347	489	39	118					
8	S31050	200	CODO 1 1/2 X 180° R.L. CED-STD	367	534	32	130					
9	S31050	2	CODO 1 1/2 X 45° CED-STD	367	534	32	130					
10	S29506	31	CODO 1 1/2 X 45° CED-STD	342	498	44	142					
11	T49961	100	CODO 3 X 90° R.L. CED-160	321	468	45	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	S44010	44010	0.330	0.200	0.720	0.009	0.001	0.300	0.020	0.020	0.010	0.012	0.002	0.002
HF	S42775	42775	0.320	0.180	0.750	0.012	0.002	0.300	0.040	0.024	0.010	0.015	0.002	0.002
HF	S42774	42774	0.320	0.180	0.750	0.012	0.002	0.300	0.040	0.024	0.010	0.015	0.002	0.002
HF	S43735	43735	0.310	0.180	0.720	0.011	0.001	0.270	0.020	0.020	0.010	0.019	0.002	0.002
HF	T51071	51071	0.320	0.190	0.660	0.010	0.002	0.290	0.050	0.071	0.021	0.040	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
HF	S38130	38130	0.313	0.180	0.710	0.009	0.001	0.280	0.030	0.043	0.020	0.022	0.001	0.001
HF	S31050	31050	0.330	0.190	0.760	0.007	0.002	0.270	0.030	0.023	0.010	0.013	0.001	0.000
HF	S31050	31050	0.330	0.190	0.760	0.007	0.002	0.270	0.030	0.023	0.010	0.013	0.001	0.000
HF	S29506	29506	0.320	0.190	0.710	0.009	0.001	0.270	0.040	0.041	0.020	0.022	0.001	0.000
HF	T49961	49961	0.310	0.180	0.660	0.008	0.002	0.280	0.050	0.059	0.022	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:

11007339 10058145 10057872 11004275 11028785 11026673 258860 479680 479680 479680 10041121

"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 620°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

Notes:
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 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.