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 9620 fax

Tenaris

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

Número: Number:	Página/Page:
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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANCER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	5382	Lista de Empaque: Packing List:	11464	Fecha/Date:	4 de Junio de 2009

Especificaciones y Grados / Standard or Specification and Steel Grade	Dimensiones y tolerancias / Dimension and tolerances	Factura/Invoice:
Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003		**Bocas / Ends**
Conform to ASME II Ed. 2001 ASME SA-234M Grade WPB, NACE MR0103-2003	**ASME B 16.9 - 2007 and ASME B 16.28 - 1994**	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	T41224	1	CODO 6 X 45° CED-STD	288	460	34	125					
2	T42101	7	CODO 6 X 45° CED-STD	263	504	33	107					
3	T42774	6	CODO 6 X 45° CED-STD	328	499	39	126					
4	T41467	9	CODO 6 X 45° CED-STD	322	505	42	137					
5	T42081	6	CODO 6 X 45° CED-STD	310	505	33	102					
6	S33738	1	CODO 6 X 45° CED-STD	315	469	36	107					
7	S29143	100	CODO 2 X 90°R.L. CED-XS	336	504	30	101					
8	T41223	24	CODO 8 X 90° R.L. CED-XS	271	463	38	120					
9	T42416	40	CODO 6 X 90° R.L. CED-XS	306	470	38	116					
10	T42633	40	CODO 10 X 90° R.L. CED-STD	329	498	31	100					
11	S33739	92	CODO 4 X 90° R.L. CED-XS	299	465	35	111					

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	T41224	41224	0.300	0.170	0.650	0.015	0.001	0.280	0.050	0.051	0.018	0.030	0.000	0.000
HF	T42101	42101	0.300	0.170	0.690	0.008	0.002	0.310	0.050	0.046	0.016	0.030	0.000	0.000
HF	T42774	42774	0.310	0.180	0.670	0.015	0.003	0.260	0.040	0.068	0.022	0.030	0.000	0.000
HF	T41467	41467	0.330	0.190	0.740	0.009	0.002	0.280	0.040	0.061	0.005	0.030	0.000	0.000
HF	T42081	42081	0.310	0.180	0.650	0.012	0.002	0.290	0.040	0.058	0.016	0.030	0.000	0.000
HF	S33738	33738	0.320	0.180	0.750	0.011	0.001	0.280	0.020	0.049	0.010	0.014	0.001	0.001
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	T41223	41223	0.310	0.180	0.650	0.012	0.002	0.270	0.050	0.070	0.009	0.030	0.000	0.000
HF	T42416	42416	0.310	0.170	0.700	0.012	0.001	0.280	0.040	0.060	0.023	0.040	0.000	0.000
HF	T42633	42633	0.310	0.180	0.680	0.011	0.003	0.280	0.060	0.054	0.019	0.030	0.000	0.000
HF	S33739	33739	0.340	0.200	0.740	0.010	0.001	0.290	0.040	0.038	0.010	0.017	0.001	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:

8054642 8065073 9001694 8048845 9010384 479795 447292
8054913 8068557 9002052 482835

"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:

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 nomalized 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.

CC-008