Tenaris

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

Tubos de Acero de México, S.A.
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 6329 - 6330	Lista de Empaque: Packing List: 11424	Fecha/Date: 12 de Mayo de 2009
Especificaciones y Grados / Standard or Specification and Steel Grade **Seamless Fittings according to ASTM A 234M WPB-07, NACE MR 01.75-2003** **Conform to ASME II Ed. 2001 ASME SA-234M 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
23	S21171	7	CODO 2 1/2 X 45° CED-STD	327	500	31	122					
24	T42161	3	CODO 10 X 45° CED-XS	314	489	41	124					
25	T43329	2	CODO 10 X 45° CED-XS	308	472	44	120					
26	S31051	14	CODO 3 X 90° R.C. CED-XS	297	473	33	133					
27	S23663	12	CODO 4 X 90° R.C. CED-XS	244	447	36	100					
28	S31050	30	CODO 1 1/4 X 45° CED-STD	367	534	32	130					
29	S45280	20	CODO 1 1/2 X 45° CED-STD	357	511	28	122					
30	S31159	3	CODO 4 X 45° CED-XS	273	458	33	105					
31	S33739	31	CODO 4 X 45° CED-XS	299	465	35	111					
32	S31158	26	CODO 4 X 45° CED-XS	284	461	33	128					
33	S31052	8	CODO 2 X 90° R.C. CED-XS	326	495	31	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	S21171	21171	0.310	0.180	0.740	0.010	0.001	0.290	0.010	0.018	0.010	0.010	0.001	0.002
HF	T42161	42161	0.310	0.180	0.690	0.016	0.001	0.280	0.050	0.054	0.009	0.020	0.000	0.000
HF	T43329	43329	0.310	0.180	0.670	0.012	0.001	0.290	0.040	0.043	0.017	0.020	0.000	0.000
HF	S31051	31051	0.340	0.200	0.750	0.008	0.001	0.280	0.030	0.030	0.010	0.021	0.001	0.000
HF	S23663	23663	0.340	0.200	0.710	0.012	0.001	0.300	0.040	0.073	0.030	0.033	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	S45280	45280	0.323	0.180	0.730	0.010	0.001	0.300	0.050	0.055	0.020	0.048	0.001	0.000
HF	S31159	31159	0.340	0.200	0.760	0.012	0.001	0.270	0.040	0.041	0.010	0.014	0.001	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
HF	S31158	31158	0.330	0.200	0.740	0.011	0.001	0.280	0.030	0.037	0.010	0.012	0.001	0.001
HF	S31052	31052	0.320	0.180	0.740	0.009	0.001	0.260	0.040	0.035	0.010	0.020	0.001	0.001

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:
369597 8063663 9008314 457123 395262 457348 329135 462048 482835 457253 458095

"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 frío 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