Tenaris

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

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
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Numero: Number:	Pagina/Page:
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: Customers Order No: 12812 - 12701

Lista de Empaque: Packing List: 13289

Fecha/Date: 24 de Abril de 2012

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

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	S48019	486	CODO 4 X 90° R.L. CED-STD	315	485	31	103					
2	S48021	426	CODO 4 X 90° R.L. CED-STD	325	478	30	104					
3	T50526	2	CODO 14 X 90° R.L. CED-STD	330	500	35	99					
4	T51307	3	CODO 14 X 90° R.L. CED-STD	306	486	34	105					
5	T51306	1	CODO 14 X 90° R.L. CED-STD	320	484	37	105					
6	T51309	2	CODO 14 X 45° CED-STD	319	476	35	149					
7	T50526	1	CODO 14 X 45° CED-STD	330	500	35	99					
8	T51305	3	CODO 14 X 45° CED-STD	289	482	34	89					
9	T59684	4	CODO 14 X 90° R.L. CED-XS	323	468	36	147					
10	T43376	1	CODO 14 X 45 CED-XS	313	483	35	120					
11	T54971	1	CODO 14 X 45 CED-XS	309	464	38	93					

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	S48019	48019	0.340	0.200	0.770	0.011	0.001	0.330	0.040	0.027	0.010	0.013	0.003	0.002
HF	S48021	48021	0.320	0.180	0.730	0.012	0.001	0.290	0.040	0.027	0.020	0.013	0.002	0.002
HF	T50526	50526	0.320	0.190	0.670	0.013	0.002	0.280	0.050	0.059	0.019	0.030	0.000	0.000
HF	T51307	51307	0.310	0.180	0.650	0.011	0.001	0.280	0.040	0.049	0.020	0.030	0.000	0.000
HF	T51306	51306	0.300	0.170	0.660	0.012	0.001	0.260	0.040	0.051	0.022	0.030	0.000	0.000
HF	T51309	51309	0.300	0.170	0.670	0.013	0.001	0.280	0.050	0.051	0.017	0.030	0.000	0.000
HF	T50526	50526	0.320	0.190	0.670	0.013	0.002	0.280	0.050	0.059	0.019	0.030	0.000	0.000
HF	T51305	51305	0.320	0.180	0.670	0.012	0.001	0.260	0.060	0.063	0.030	0.030	0.000	0.000
HF	T59684	59684	0.310	0.180	0.660	0.015	0.000	0.280	0.060	0.073	0.023	0.040	0.000	0.000
HF	T43376	43376	0.310	0.180	0.670	0.016	0.003	0.290	0.040	0.055	0.013	0.030	0.000	0.000
HF	T54971	54971	0.310	0.180	0.670	0.008	0.003	0.270	0.060	0.048	0.023	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:

11057940 11058467 11028787 10040714 11039747 10041694
11028787 10040856 12023791 9011588 11030432

"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.