

Tenaris

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

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

Numero:
Number:

25115

Pagina/Page:

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Vendido a: Sold to:	TUVANSA MONTERREY	Pedido del Cliente No: Customers Order No:	10882 - 10984 - 11192 -	Lista de Empaque: Packing List:	12962	Fecha/Data:	14 de Noviembre de 2011
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234 WPB-07, NACE MR 01.78-2003	Dimensiones y tolerancias / Dimension and tolerances	ASME B 16.9 - 2007 and ASME B 16.28 - 1994	Factura/Invoice:	Bocas / Ends	Biselado / Bevelled ends	
Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB, NACE MR0103-2003							

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	T55633	6	CODO 16 X 90° R.L. CED-XS	306	476	46	120					
2	T51307	48	CODO 14 X 45° CED-STD	306	486	34	105					
3	T57238	54	CODO 12 X 90° R.L. CED-STD	319	496	39	124					
4	T54971	18	CODO 12 X 90° R.L. CED-STD	332	487	41	122					
5	T55579	96	CODO 10 X 45° CED-STD	300	480	42	116					
6	T56665	14	CODO 16 X 90° R.L. CED-STD	336	493	42	122					
7	T54766	4	CODO 18 X 90° R.L. CED-STD	341	500	47	124					
8	T51982	11	TEE 6 CED-STD	331	507	45	128					
9	T54713	89	TEE 6 CED-STD	322	494	40	122					
10	T29855	1	TEE RED. 10 X 8 CED-80	323	473	45	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	T55633	55633	0.310	0.180	0.680	0.009	0.002	0.270	0.050	0.064	0.024	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	T57238	57238	0.320	0.180	0.680	0.013	0.001	0.310	0.050	0.078	0.020	0.040	0.000	0.000	
HF	T54971	54971	0.300	0.170	0.670	0.008	0.004	0.270	0.060	0.048	0.023	0.030	0.000	0.000	
HF	T55579	55579	0.300	0.170	0.670	0.008	0.002	0.270	0.040	0.060	0.022	0.050	0.000	0.000	
HF	T56665	56665	0.300	0.170	0.670	0.010	0.002	0.280	0.040	0.069	0.026	0.030	0.000	0.000	
HF	T54766	54766	0.330	0.180	0.770	0.011	0.001	0.280	0.070	0.048	0.031	0.040	0.000	0.000	
HF	T51982	51982	0.340	0.180	0.840	0.010	0.001	0.270	0.040	0.077	0.041	0.040	0.000	0.000	
HF	T54713	54713	0.320	0.180	0.700	0.008	0.002	0.260	0.050	0.080	0.015	0.040	0.000	0.000	
HF	T29855	29855	0.320	0.180	0.660	0.011	0.003	0.280	0.060	0.078	0.032	0.040	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 N°:
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°:
11042179 10040836 11052242 11039070 11041520 11044083
11018438 11010934 11028784 6027133

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 820°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.
Tiempo de permanencia 10'.
Inspección Dimensional: Satisfactoria.
MP: FORMADO EN CALIENTE/HOT FORMED

Notes:
Hot formed fittings in a range from 820°C to 980°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
OP: 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