



Tenaris

CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE

(DIN EN 10204:2004E - ISO 10474 3.1.B)

Vendido a: PROVEEDORA DE MATERIALES ANGER, S.A.

Sold to: DE C.V.

Pedido del Cliente No: 5275 - 5311 - 1234 - 5274 -
Customers Order No:

Lista de Empaque: 11098

Fecha/Date: 5 de Diciembre de 2008

Especificaciones y Grados / Standard or Specification and Steel Grade

Dimensiones y tolerancias / Dimension and tolerances

Factura/Invoice: Bocas / Ends
Biselado / Bevelled ends

Seamless fittings according to ASTM A 234 "W" WPB-07, A234 "W" WPB-06, NACE MR 01.75-2003
Conform to ASME II Ed. 2001 ASME SA-234 "W" Grade WPB, NACE MR0103-2003

ASME B 16.9 - 2007 and ASME B 16.28 - 1994

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DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPATURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA / HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	Joules 1	Joules 2	Joules 3	PROMEDIO AVERAGE Joules
1	T42080	100	CODO 6 X 90° R.I. CED-STD.	321	523	35	100					
2	T41645	2	CODO 14 X 90° R.I. CED-STD	279	485	34	100					
3	T41975	6	CODO 14 X 90° R.I. CED-STD	330	496	43	118					
4	T41140	5	CODO 16 X 90° R.I. CED-XS	245	481	37	115					
5	S31051	2000	CODO 2 X 90° R.I. CED-STD	333	501	30	114					
6	T41466	60	CODO 8 X 90° R.I. CED-STD	276	471	39	109					

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	COLADAH/HEAT M.P./MOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T42080	42080	0.310	0.180	0.670	0.009	0.001	0.250	0.060	0.061	0.020	0.030	0.000	0.000
HF	T41645	41645	0.300	0.170	0.660	0.014	0.001	0.270	0.050	0.051	0.009	0.030	0.000	0.000
HF	T41975	41975	0.300	0.170	0.680	0.008	0.001	0.270	0.050	0.069	0.019	0.030	0.000	0.000
HF	T41140	41140	0.320	0.180	0.790	0.010	0.002	0.290	0.030	0.044	0.005	0.020	0.000	0.000
HF	S31051	31051	0.320	0.190	0.730	0.009	0.001	0.260	0.030	0.025	0.010	0.012	0.001	0.001
HF	T41466	41466	0.310	0.180	0.670	0.010	0.002	0.280	0.040	0.061	0.006	0.030	0.000	0.000

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son

verdaderos o una copia fiel de los certificados enviados por el fabricante y/o el proveedor de Materia Prima (Tuberia 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) cuts conform to ASTM A106 Grade B N°.

8057766 8062574 8062571 8053371 458002 8052699

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.

Notes:

Formado en caliente a 820°C-980°C, enfriado al aire, Formado en frío normalizado a 940°C máx.

Hot formed fittings in a range from 820°C to 980°C, cooled in still air.

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Inspección Dimensional: Satisfactoria.

Visual dimensional check: Satisfactory

CF: FORMADO EN FRIJO/COLD FORMED

Holding time 10'.

Usual dimensional check: Satisfactory

CF: FORMADO EN FRIJO/COLD FORMED

ING. WALDO GALLEGOS GALVAN

Quality Manager

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.