

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

Numero:
Number:

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20163

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Vendido a: Sold to:	PROVEEDORA DE MATERIALES ANGER, S.A. DE C.V.	Pedido del Cliente No: Customers Order No:	5185 - 5191	Lista de Empaque: Packing List:	10413	Fecha/Date:	24 de Abril de 2008
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234"M" WPB-97, A234"M" WPB-05a, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234"M", Grade WPB, NACE MRO 103-2003	Dimensiones y tolerancias / Dimension and tolerances	ASME B 16.9 - 2003 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 (Mpc)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T37883	6	CODO 16 X 45° CED-STD	289	486	37	101					
2	S23751	300	CODO 2 X 90° R.I. CED-YS	340	496	36	135					
3	T35794	6	CODO 14 X 45° CED-STD	349	501	33	89					
4	T29807	8	CODO 10 X 90° R.I. CED-20	340	495	38	88					
5	T37919	26	CODO 8 X 45° CED-STD	329	469	30	98					
6	T35714	34	CODO 8 X 45° CED-STD	334	484	38	89					
7	T37795	4	CODO 10 X 45° CED-STD	270	467	31	101					
8	T26740	4	CODO 10 X 45° CED-STD	317	481	40	106					
9	T38263	23	CODO 10 X 45° CED-STD	340	495	30	122					
10	T38264	5	CODO 10 X 45° CED-STD	326	471	33	106					
11	T37205	18	CODO 12 X 45° CED-STD	374	500	33	91					

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	T37883	37883	0.340	0.190	0.790	0.012	0.003	0.280	0.050	0.058	0.013	0.040	0.000	0.000
HF	S23751	23751	0.350	0.190	0.800	0.008	0.001	0.300	0.060	0.037	0.030	0.025	0.001	0.000
HF	T35794	35794	0.320	0.180	0.700	0.013	0.001	0.270	0.040	0.082	0.024	0.040	0.000	0.000
HF	T29807	29807	0.310	0.170	0.660	0.007	0.003	0.280	0.060	0.084	0.048	0.040	0.000	0.000
HF	T37919	37919	0.320	0.180	0.700	0.010	0.001	0.280	0.050	0.063	0.017	0.040	0.000	0.000
HF	T35714	35714	0.340	0.190	0.740	0.009	0.001	0.290	0.050	0.075	0.024	0.040	0.000	0.000
HF	T37795	37795	0.310	0.170	0.710	0.009	0.002	0.260	0.060	0.065	0.018	0.050	0.000	0.000
HF	T26740	26740	0.310	0.170	0.680	0.007	0.002	0.270	0.060	0.062	0.019	0.050	0.000	0.000
HF	T38263	38263	0.320	0.180	0.690	0.010	0.002	0.250	0.070	0.058	0.021	0.060	0.000	0.000
HF	T38264	38264	0.290	0.170	0.660	0.011	0.001	0.250	0.040	0.047	0.007	0.030	0.000	0.000
HF	T37205	37205	0.310	0.170	0.660	0.010	0.003	0.270	0.050	0.055	0.050	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) certs conform to ASTM A106 Grade B N°
8005951 7045984 7058614 6038771 8009630 7038897
8016405 6001834 8011658 8011658 7058503
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 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 820°C to 980°C, cooled in still air,
Cold formed normalized at 940°C max.
Holding time 10'.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIO/COLD FORMED

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.

Jefe de Calidad:
Quality Manager: 
ING. WALDO GALLEGOS GALVAN