



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

Vendido a: PLESA ANAHUAC Y CIA. S.A. DE C.V.  
Sold to:

Pedido del Cliente No:  
Customers Order No:

3925 - 3910

Especificaciones y Grados / Standard or Specification and Steel Grade

Dimensiones y tolerancias / Dimension and tolerances

Seamless Fittings according to ASTM A 234 "W", WPB-97, A234 "W", WPB-05a, NACE MR 01-75-2003  
Conform to ASME II Ed. 2001 ASME SA-234 "W", Grade WPB.

ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Factura/Invoice:  
Bocas / Ends  
Biselado / Bevelled ends

Numero: 19534  
Pagina/Page: 1 DE 1  
Lista de Empaque: 10065  
Packing List:

Fecha/Date: 5 de Enero de 2008  
Tubos de Acero de Mexico, S.A.  
Carr. My-Laredo Km 24.2  
Apartado Postal 43  
(65550) C. de Flores, N.L. Méx.  
(52) 81 8305 9600 tel  
(52) 81 8305 9620 fax

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. RUPURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S21712	2	CODO 4 X 90° R.L. CED-STD	301	466	32	110					
2	S21713	228	CODO 4 X 90° R.L. CED-STD	278	478	34	110					
3	T36860	100	CODO 6 X 90° R.L. CED-STD.	352	493	38	93					
4	T34260	1	CODO 6 X 45° CED-STD	328	485	40	90					
5	T36485	59	CODO 6 X 45° CED-STD	327	484	35	89					
6	S21713	160	CODO 4 X 45° CED-STD	278	478	34	110					
7	S22787	50	CODO 3 X 45° CED-STD	330	479	38	115					
8	S45664	60	CODO 2 X 90° R.L. CED-XS	309	496	34	130					
9	T37204	36	CODO 12 X 45° CED-STD	375	508	34	90					
10	T37093	40	CODO 10 X 90° R.L. CED-STD	307	488	40	96					
11	T36139	60	CODO 8 X 90° R.L. CED-STD	296	474	37	84					

**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	S21712	21712	0.330	0.190	0.710	0.012	0.001	0.270	0.045	0.010	0.023	0.001	0.002	
HF	S21713	21713	0.320	0.190	0.700	0.013	0.001	0.250	0.041	0.010	0.022	0.001	0.001	
HF	T36860	36860	0.320	0.180	0.690	0.009	0.002	0.290	0.043	0.038	0.030	0.000	0.000	
HF	T34260	34260	0.320	0.180	0.670	0.008	0.003	0.290	0.066	0.039	0.040	0.000	0.000	
HF	T36485	36485	0.330	0.180	0.770	0.012	0.002	0.300	0.040	0.065	0.021	0.030	0.000	0.000
HF	S21713	21713	0.320	0.190	0.700	0.013	0.001	0.250	0.041	0.010	0.022	0.001	0.001	
HF	S22787	22787	0.310	0.180	0.730	0.010	0.002	0.280	0.025	0.010	0.015	0.001	0.001	
HF	S45664	45664	0.340	0.200	0.770	0.010	0.001	0.300	0.030	0.022	0.020	0.017	0.001	0.002
HF	T37204	37204	0.310	0.170	0.670	0.007	0.003	0.270	0.050	0.074	0.049	0.040	0.000	0.000
HF	T37093	37093	0.310	0.180	0.680	0.008	0.001	0.290	0.050	0.048	0.012	0.030	0.000	0.000
HF	T36139	36139	0.320	0.180	0.670	0.008	0.003	0.270	0.050	0.093	0.037	0.040	0.000	0.000

Verdadero 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°:  
373204 373204 7054692 7038411 7054704 373204 386289  
321672 7058503 7055547 7044341

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:  
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.  
Cold formed normalized at 840°C max.  
Holding time 10'.  
Visual dimensional check. Satisfactory.  
CF: FORMADO EN FRIO/COLD FORMED

Notes:  
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.  
Cold formed normalized at 840°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. JOSE MARTINEZ MACIAS  
CC-008



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

Vendido a: PLESA ANAHUAC Y CIA. S.A. DE C.V.  
Sold to:

Especificaciones y Grados / Standard or Specification and Steel Grade  
Seamless Fittings according to ASTM A 234 "W" WPB-97, A234 "W" WPB-05a, NACE MR 01-75-2003  
Conform to ASME II Ed. 2001 ASME SA-234 "W" Grade WPB.

Pedido del Cliente No: 3910 - 3925  
Customers Order No:  
Dimensiones y tolerancias / Dimension and tolerances  
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Numero: Number:	19535	Pagina/Page:	1 DE 1
Lista de Empaque: Packing List:	10065	Fecha/Date:	5 de Enero de 2008
Factura/Invoice: Bocas / Ends	Biselado / Bevelled ends		

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 9620 Tel  
(52) 81 8305 9620 Fax

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C			
				ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUP.TURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
12	T36861	60	CODO 8 X 90° R.L. CED-STD	302	475	36	90				
13	T36860	60	CODO 8 X 90° R.L. CED-STD	332	517	35	90				
14	S22585	48	CODO 2 1/2 X 45° CED-STD	331	485	30	125				
15	S22585	50	RED. CONC. 2 1/2 X 2 CED-STD	339	499	32	124				
16	T35601	30	RED. CONC. 10 X 6 CED-STD	313	478	35	90				
17	S38903	1	CODO 5 X 90° R.L. CED-XS	326	481	39	99				
18	T22633	12	CODO 5 X 90° R.L. CED-XS	323	468	41	116				
19	T22635	2	CODO 5 X 90° R.L. CED-XS	311	455	46	103				
20	S21484	2	CODO 5 X 90° R.L. CED-XS	316	499	40	139				
21	S38031	1	CODO 5 X 90° R.L. CED-XS	334	492	35	112				
22	T22409	2	CODO 5 X 90° R.L. CED-XS	396	508	34	116				

PROCESO PROCESS	COLADA HEAT CODE	M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C	%E	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T36861	36861	0.320	0.180	0.690	0.008	0.002	0.290	0.040	0.039	0.045	0.030	0.000	0.000
HF	T36860	36860	0.310	0.170	0.700	0.012	0.002	0.300	0.070	0.051	0.022	0.030	0.000	0.000
HF	S22585	22585	0.310	0.170	0.760	0.012	0.001	0.270	0.040	0.026	0.010	0.022	0.001	0.002
CF	S22585	22585	0.310	0.170	0.760	0.011	0.001	0.270	0.040	0.027	0.010	0.022	0.001	0.002
CF	T35601	35601	0.320	0.180	0.680	0.011	0.001	0.300	0.060	0.070	0.034	0.030	0.000	0.000
HF	S38903	38903	0.324	0.180	0.770	0.009	0.002	0.280	0.030	0.028	0.030	0.021	0.001	0.001
HF	T22633	22633	0.300	0.170	0.680	0.009	0.001	0.280	0.050	0.054	0.027	0.030	0.000	0.000
HF	T22635	22635	0.310	0.170	0.680	0.008	0.000	0.270	0.050	0.070	0.044	0.030	0.000	0.000
HF	S21484	21484	0.324	0.190	0.720	0.011	0.001	0.300	0.030	0.060	0.010	0.020	0.001	0.001
HF	S38031	38031	0.322	0.190	0.730	0.011	0.001	0.280	0.020	0.037	0.010	0.018	0.001	0.001
HF	T22409	22409	0.300	0.170	0.670	0.007	0.000	0.270	0.040	0.054	0.017	0.030	0.000	0.000

Notes: Formado en caliente a 820°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max. Time of permeability 10'. Visual dimensional check: Satisfactory.

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.

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. JOSE MARTINEZ MACIAS



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

PEESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: 3910 - 3906 - 3925  
Customers Order No:

Numero: 19536  
Pagina/Page: 1 DE 1

Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km 24.2  
Apartado Postal 43  
(65550) C. de Flores, N.L. Mex.  
(52)-81-8305-9660 tel  
(52)-81-8305-9620 fax  
5 de Enero de 2008

Envío a: PEESA ANAHUAC Y CIA. S.A. DE C.V.  
Sold to: PEESA ANAHUAC Y CIA. S.A. DE C.V.  
Especificaciones y Grados / Standard or Specification and Steel Grade  
Seamless Fittings according to ASTM A 234"W, WPB-97, A234"W, WPB-05a, NACE MR 01-75-2003  
Conform to ASME II Ed. 2001 ASME SA-234"W, Grade WPB.

Dimensiones y tolerancias / Dimension and tolerances  
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Lista de Empaque: 10065  
Packing List:  
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	T36286	100	TEE 6 CED-STD	385	508	37	90					
24	T33854	1	TEE RED. 10 X 4 CED-STD	341	476	34	90					
25	T33994	4	TEE RED. 10 X 4 CED-STD	346	493	45	90					
26	T34533	2	RED. CONC. 16 X 12 CED-STD	345	488	31	85					
27	T33051	8	RED. CONC. 16 X 12 CED-STD	307	478	34	137					
28	S20509	30	RED. CONC. 4 X 2 CED-XS	279	471	36	102					
29	S22135	30	CODO 3 X 45° CED-XS	312	480	37	120					
30	S20539	60	CODO 4 X 45° CED-XS	272	459	39	102					
31	T32956	20	RED. CONC. 8 X 3 CED-STD	301	471	37	91					
32	T15572	6	RED. CONC. 5 X 4 CED-STD	405	516	28	119					
33	T34258	14	RED. CONC. 5 X 4 CED-STD	329	499	40	123					

**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	T36286	36286	0.350	0.180	0.850	0.013	0.001	0.280	0.060	0.068	0.030	0.030	0.000	0.000
HF	T33854	33854	0.310	0.180	0.660	0.008	0.001	0.300	0.050	0.059	0.030	0.030	0.000	0.000
HF	T33994	33994	0.310	0.180	0.660	0.010	0.002	0.270	0.040	0.055	0.022	0.030	0.000	0.000
CF	T34533	34533	0.320	0.170	0.710	0.013	0.002	0.280	0.080	0.077	0.054	0.040	0.000	0.000
CF	T33051	33051	0.320	0.180	0.690	0.011	0.002	0.320	0.060	0.053	0.023	0.030	0.000	0.000
CF	S20509	20509	0.340	0.200	0.760	0.011	0.001	0.310	0.050	0.026	0.010	0.016	0.001	0.000
HF	S22135	22135	0.320	0.170	0.800	0.012	0.001	0.280	0.040	0.025	0.010	0.018	0.001	0.001
HF	S20539	20539	0.330	0.190	0.750	0.013	0.001	0.300	0.050	0.032	0.020	0.022	0.001	0.001
CF	T32956	32956	0.300	0.170	0.660	0.009	0.003	0.280	0.060	0.055	0.019	0.030	0.000	0.000
CF	T15572	15572	0.310	0.160	0.720	0.007	0.002	0.270	0.050	0.089	0.032	0.060	0.000	0.000
CF	T34258	34258	0.310	0.170	0.680	0.009	0.001	0.280	0.070	0.072	0.043	0.040	0.000	0.000

Notes:  
Formado en caliente a 620°C-900°C, enfriado al aire; Formado en frío normalizado a 940°C max.  
Tempo de permanencia 10'.  
Inspección Dimensional: Satisfactoria.

Notes:  
Hot formed fittings in a range from 620°C to 900°C, cooled in still air.  
Cold formed normalized at 940°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory

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.

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 (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°. 7046009 7029464 7029464 7036264 7026675 366679 385335 365216 7010312 4009401 7036259

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.

Jefe de Calidad:   
Quality Manager: ING. JOSE MARTINEZ MACIAS  
CC-008



**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: PLESA ANAHUAC Y CIA. S.A. DE C.V.  
Sold to:  
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 0175-2003  
Conform to ASME II Ed. 2001 ASME SA-234 "M", Grade WPB.

Pedido del Cliente No: 3910 -  
Customers Order No:  
Dimensiones y tolerancias / Dimension and tolerances  
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Numero: Number:	19537	Página/Page:	1 DE 1
Lista de Empaque: Packing List:	10065	Fecha/Date:	5 de Enero de 2008
Factural/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
34	S43766	50	RED. CONC. 2 1/2 X 1 1/2 CED-STD	327	498	32	124					
35	T19982	20	RED. CONC. 6 X 2 1/2 CED-STD	315	477	40	109					

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
CF	S43766	43766	0.340	0.200	0.770	0.013	0.001	0.280	0.030	0.055	0.020	0.021	0.001	0.001
CF	T19982	19982	0.330	0.180	0.670	0.007	0.004	0.280	0.080	0.078	0.068	0.040	0.000	0.000

Notas:  
Hid formed fittings in a range from 620°C to 980°C, cooled in still air.  
Cold formed normalized at 940°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory

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.  
Inspección Dimensional: Satisfactoria

HF: FORMADO EN CALIENTE/HOT FORMED  
CF: FORMADO EN FRIOCOLD 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.

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°. 313697 5000205

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.

Jefe de Calidad:  
Quality Manager:   
ING. JOSE MARTINEZ MACIAS  
CC-008