



Tubos de Acero de México, S.A.
Carr. Mty-Laredo Km 24.2
Apartado Postal 43
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CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)		Numero: Number: 29793	Pagina/Page: 1
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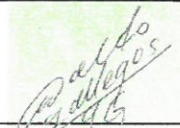
Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 21012 - 21160	Lista de Empaque: Packing List: 15523	Fecha/Date: 16 de julio de 2015
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-13e Conform to ASME II Ed. 2013 ASME SA-234, Grade WPB	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2012		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	T8766	228	CODO 4 X 90° R.L. CED-STD	334	494	38	146					
2	T77294	19	CODO 16 X 45° CED-STD	322	491	35	137					
3	T72389	5	CODO 16 X 45° CED-STD	241	447	36	141					
4	T77390	200	CODO 6 X 90° R.L. CED-STD.	336	497	40	124					
5	T77288	12	CODO 14 X 90° R.L. CED-STD	328	493	35	134					
6	T73886	5	TEE 12 CED-STD	258	441	37	132					
7	T8432	160	CODO 3 X 90° R.L. CED-XS	268	447	35	161					
8	T75113	36	CODO 8 X 90° R.L. CED-XS	347	466	30	134					
9	T65030	2	CODO 12 X 45° CED-STD	308	478	36	143					
10	T72420	2	CODO 12 X 45° CED-STD	257	434	34	142					
11	T70227	1	CODO 12 X 45° CED-STD	305	463	35	145					

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	T8766	8766	0.310	0.190	0.690	0.012	0.002	0.270	0.020	0.037	0.006	0.020	0.000	0.000
HF	T77294	77294	0.340	0.190	0.790	0.005	0.001	0.270	0.040	0.070	0.030	0.040	0.000	0.000
HF	T72389	72389	0.320	0.170	0.730	0.005	0.002	0.260	0.060	0.067	0.024	0.050	0.000	0.000
HF	T77390	77390	0.330	0.180	0.770	0.006	0.002	0.260	0.040	0.080	0.017	0.040	0.000	0.000
HF	T77288	77288	0.310	0.180	0.670	0.006	0.001	0.280	0.040	0.069	0.021	0.040	0.000	0.000
HF	T73886	73886	0.320	0.190	0.670	0.005	0.001	0.270	0.050	0.075	0.018	0.040	0.000	0.000
HF	T8432	8432	0.300	0.170	0.700	0.005	0.001	0.290	0.020	0.027	0.008	0.020	0.000	0.000
HF	T75113	75113	0.310	0.170	0.680	0.007	0.002	0.280	0.070	0.078	0.037	0.060	0.000	0.000
HF	T65030	65030	0.320	0.190	0.650	0.010	0.002	0.270	0.060	0.057	0.032	0.030	0.000	0.000
HF	T72420	72420	0.320	0.180	0.660	0.007	0.001	0.270	0.070	0.074	0.020	0.050	0.000	0.000
HF	T70227	70227	0.320	0.180	0.680	0.006	0.001	0.300	0.060	0.057	0.019	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°:
15019101 15024075 14040180 15025135 15020608 15011473 14042901 15013891 13029590 14049686 14014515
"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 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 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 / 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. MATERIAL ACCORDING TO NACE MR0175 / ISO 15156-1, 2009 AND NACE MR0103, 2012 ONLY HARDNESS	FOR03161
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 Quality Manager/Jefe de Calidad:
 ING. WALDO GALLEGOS GALVAN



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CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)		Numero: Number: 29794	Pagina/Page: 2
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 21160 - 21012	Lista de Empaque: Packing List: 15523	Fecha/Date: 16 de julio de 2015
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-13e Conform to ASME II Ed. 2013 ASME SA-234, Grade WPB	Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2012		Factura/Invoice: Bocas / Ends Biselado / Bevelled ends

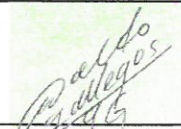
DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION				PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
12	T65887	1	CODO 12 X 45° CED-STD	289	478	44	159					
13	T63897	5	CODO 12 X 45° CED-STD	349	516	35	142					
14	T70366	7	CODO 12 X 45° CED-STD	261	478	37	143					
15	T77766	40	CODO 10 X 90° R.L. CED-STD	271	435	31	140					
16	T76095	120	CODO 8 X 90° R.L. CED-STD	307	487	41	118					
17	T77294	18	CODO 16 X 90° R.L. CED-STD	322	491	35	137					
18	T69908	1	TEE 16 CED-STD	292	436	40	135					
19	T73773	2	TEE 16 CED-STD	303	487	38	140					
20	T6971	5	CODO 5 X 90° R.L. CED-XS	288	479	42	120					
21	T7192	25	CODO 5 X 90° R.L. CED-XS	323	472	36	151					
22	T65888	3	TEE 16 CED-XS	310	467	39	145					

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	T65887	65887	0.310	0.180	0.670	0.006	0.000	0.280	0.040	0.057	0.011	0.030	0.000	0.000
HF	T63897	63897	0.330	0.180	0.760	0.011	0.003	0.260	0.050	0.063	0.018	0.030	0.000	0.000
HF	T70366	70366	0.320	0.180	0.700	0.006	0.001	0.290	0.040	0.070	0.033	0.040	0.000	0.000
HF	T77766	77766	0.310	0.190	0.680	0.005	0.002	0.260	0.050	0.059	0.015	0.030	0.000	0.000
HF	T76095	76095	0.310	0.180	0.680	0.007	0.002	0.270	0.040	0.069	0.031	0.030	0.000	0.000
HF	T77294	77294	0.340	0.190	0.790	0.005	0.001	0.270	0.040	0.070	0.030	0.040	0.000	0.000
HF	T69908	69908	0.300	0.170	0.650	0.005	0.003	0.280	0.060	0.064	0.016	0.030	0.000	0.000
HF	T73773	73773	0.320	0.180	0.660	0.006	0.002	0.270	0.060	0.080	0.028	0.060	0.000	0.000
HF	T6971	6971	0.310	0.180	0.700	0.005	0.002	0.300	0.020	0.041	0.010	0.020	0.000	0.000
HF	T7192	7192	0.310	0.180	0.720	0.006	0.001	0.270	0.030	0.035	0.010	0.020	0.000	0.000
HF	T65888	65888	0.310	0.180	0.670	0.007	0.002	0.280	0.030	0.050	0.011	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 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°. 13040126 13009864 14014741 15025882 15017837 15024075 14025131 14058187 14044789 14011757 13066195 "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 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 normalized 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

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CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE (DIN EN 10204:2004E - ISO 10474 3.1.B)	Numero: Number:	Pagina/Page:
	29795	3

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Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM A 234 WPB-13e	Dimensiones y tolerancias / Dimension and tolerances	ASME B 16.9 - 2012		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	T76855	20	CODO 10 X 90° R.L. CED-80	316	472	38	136					
24	S36056	60	CODO 1 1/4 X 45° CED-STD	370	513	47	126					
25	T73886	6	TEE 12 CED-40	258	441	37	132					

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	T76855	76855	0.320	0.180	0.730	0.007	0.002	0.290	0.040	0.074	0.029	0.040	0.000	0.000
HF	S36056	36056	0.320	0.170	0.760	0.012	0.001	0.270	0.050	0.050	0.020	0.025	0.001	0.001
HF	T73886	73886	0.320	0.190	0.670	0.005	0.001	0.270	0.050	0.075	0.018	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°: 15015164 15013895 15011473

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