



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474: 2013 3.1.B)

Tubos de Acero de Mexico, S.
Carr. Mty-Laredo Km 24.2
Aparato Poral 43
(52) 81 8305 9600 tel
(52) 81 8305 9620 fax

Comprado a: PLESA ANAHUAC Y CIA. S.A. DE C.V.
Pedido del Cliente No: 29242
Fecha/Date: 26 de marzo de

Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.
Customers Order No: 29242
Lista de Empaque: 18583
Fecha/Date: 26 de marzo de

Especificaciones y Grados / Standard or Specification and Steel Grade
Dimensiones y tolerancias / Dimension and tolerances
Factura/Invoice: Bocas / Ends
Seamless fittings according to ASTM A 234 WPB-19e
ASME B 16.9 - 2018
Biselado / Bevelled ends
Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB

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. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROME AVERA Joule	
1	T99151	12	TEE 8 CED-STD	325	488	37	139						
2	T31148	20	TEE 8 CED-STD	342	493	33	139						
3	T13859	120	CODO 6 X 45° CED-STD	321	483	35	143						
4	T13583	160	CODO 4 X 45° CED-STD	420	497	30	141						
5	S44314	50	CODO 2 X 45° CED-STD	336	496	30	130						
6	T13864	80	CODO 8 X 45° CED-STD	314	476	38	118						
7	T13586	60	CODO 4 X 90° R.C. CED-STD	466	547	30	151						
8	S43944	60	CODO 1 1/4 X 45° CED-STD	340	517	39	114						
9	T99270	50	CODO 3 X 45° CED-XS	332	482	39	120						
10	S23210	60	CODO 2 X 45° CED-XS	322	485	28	126						
11	S25676	40	CODO 2 X 90° R.C. CED-XS	323	487	30	130						

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	T99151	99151	0.300	0.170	0.670	0.007	0.003	0.260	0.040	0.060	0.030	0.030	0.002	0.000
HF	T31148	31148	0.320	0.180	0.660	0.008	0.002	0.260	0.080	0.080	0.040	0.040	0.002	0.000
HF	T13859	13859	0.310	0.170	0.790	0.006	0.003	0.300	0.020	0.040	0.000	0.020	0.003	0.000
HF	T13583	13583	0.300	0.160	0.780	0.006	0.003	0.280	0.020	0.050	0.000	0.020	0.004	0.000
HF	S44314	44314	0.350	0.200	0.760	0.010	0.002	0.300	0.050	0.050	0.030	0.029	0.002	0.000
HF	T13864	13864	0.310	0.170	0.780	0.007	0.003	0.280	0.020	0.040	0.000	0.020	0.003	0.000
HF	T13586	13586	0.320	0.180	0.780	0.006	0.003	0.290	0.020	0.050	0.000	0.020	0.004	0.000
HF	S43944	43944	0.320	0.180	0.750	0.007	0.000	0.320	0.050	0.050	0.010	0.021	0.002	0.000
HF	T99270	99270	0.310	0.170	0.670	0.005	0.002	0.280	0.050	0.070	0.030	0.040	0.003	0.000
HF	S23210	23210	0.340	0.190	0.770	0.010	0.001	0.300	0.050	0.050	0.010	0.023	0.005	0.001
HF	S25676	25676	0.320	0.180	0.740	0.010	0.001	0.289	0.030	0.040	0.020	0.022	0.001	0.001

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

Formado en caliente a 820°C-980°C, enfriado al aire.
Cold formed normalized at 940°C max.
Holding time: 10'

Inspeccion Dimensional: Satisfactoria.
Visual dimensional check: Satisfactory

CF: FORMADO EN FRIO/COLD FORMED
ING. ANA GABRIELA VAZQUEZ MAYORAL

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 80. 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 80. MATERIAL ACCORDING TO NACE MR0175/ISO 15196, 2015 AND NACE MR0103, 2015 ONLY HARDNESS

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.
Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecánicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor.
We certify that result of chemical analysis and mechanical test are true and correct.
Material (Seamless Pipe) certs conform to ASTM A106 Grade B N°.
19022182 19058362 19052378 19045281 17048941 190519050962 17050166 19044106 19009248 19049391

FORO:

CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE

(DIN EN 10204:2004E - ISO 10474:2013 3.1.B)

Tubos de Acero de México, S
Carr. Méty-Laredo Km 24.2
Aparado Postal 43
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(52) 81 8305 9620 fax

Vendido a:	PIESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No:	29242-	Lista de Empaque:	18583	Fecha/Date:	26 de marzo de
Sold to:		Customers Order No:		Packing List:		Factural/Invoice:	Bocados / Ends
Especificaciones y Grados / Standard or Specification and Steel Grade		Dimensiones y tolerancias / Dimension and tolerances		Bisalado / Bevelled ends			
Seamless Fittings according to ASTM A 234 WPB-19e		ASME B 16.9 - 2018					
Conform to ASME II Ed. 2019, ASME SA-234 Grade WPB							

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. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	1 Joules	2 Joules	3 Joules
12	T31508	2	RBD. CONC. 12 X 6 CED-80	364	502	37			
13	T31602	10	TEE 5 CED-XS	302	465	41			
14	T31601	6	TEE 5 CED-STD	300	484	30			
15	T86865	14	TEE 5 CED-STD	315	483	38			

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
CE	T31508	31508	0.310	0.180	0.680	0.007	0.001	0.260	0.050	0.060	0.020	0.030	0.002	0.000
HF	T31602	31602	0.290	0.160	0.660	0.011	0.000	0.260	0.050	0.060	0.020	0.030	0.001	0.000
HF	T31601	31601	0.310	0.170	0.670	0.012	0.000	0.260	0.060	0.070	0.030	0.030	0.002	0.000
HF	T86865	86865	0.310	0.180	0.690	0.010	0.001	0.270	0.040	0.080	0.019	0.040	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° 19058364 19052759 19050941 170445282

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° 19058364 19052759 19050941 170445282

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 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

Quality Manager/Jefe de Calidad:
ING. ANA GABRIELA VAZQUEZ MAYORAL

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, 2015 AND NACE MR0103.2015 ONL Y HARDNESS

FORO: