



Tubos de Acero de México, S.A.  
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**CERTIFICADO DE CALIDAD  
 INSPECTION CERTIFICATE**  
 (DIN EN 10204:2004E - ISO 10474 3.1.B)

Numero:  
 Number: 27998  
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Vendido a: Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No: Customers Order No: 16529	Lista de Empaque: Packing List: 14550	Fecha/Date: 30 de Septiembre de 2013
Especificaciones y Grados / Standard or Specification and Steel Grade Seamless Fittings according to ASTM A 234 WPB-10, NACE MR 01.75-2003 Conform to ASME II Ed. 2001 ASME SA-234, Grado WPB, NACE MR0103-2003		Dimensiones y tolerancias / Dimension and tolerances ASME B 16.9 - 2007	
		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	T5875	20	CODO 6 X 90° R.C. CED-STD	302	492	34	148					
2	T65578	1	TEE 12 CED-STD	305	485	46	150					
3	T65019	4	TEE 12 CED-STD	258	464	37	150					
4	T6457	60	CODO 6 X 45° CED-STD	322	479	35	146					
5	T65956	20	TEE 6 CED-XS	298	482	44	146					
6	T64660	32	CODO 4 X 45° CED-STD	346	488	30	152					
7	T6084	48	CODO 4 X 45° CED-STD	340	485	30	148					
8	T65030	6	CODO 14 X 45° CED-STD	277	471	68	146					
9	T64060	32	CODO 10 X 90° R.L. CED-STD	339	485	37	155					
10	T65451	8	CODO 10 X 90° R.L. CED-STD	332	483	37	146					
11	T65956	5	RED. CONC. 8 X 4 CED-XS	298	482	44	146					

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	T5875	5875	0.320	0.180	0.780	0.005	0.001	0.320	0.020	0.023	0.007	0.020	0.000	0.000
HF	T65578	65578	0.310	0.180	0.660	0.015	0.003	0.280	0.060	0.061	0.015	0.030	0.000	0.000
HF	T65019	65019	0.320	0.170	0.780	0.014	0.001	0.270	0.050	0.065	0.028	0.030	0.000	0.000
HF	T6457	6457	0.300	0.170	0.710	0.004	0.001	0.260	0.020	0.037	0.015	0.020	0.000	0.000
HF	T65956	65956	0.310	0.180	0.670	0.008	0.001	0.310	0.050	0.065	0.017	0.040	0.000	0.000
HF	T64660	64660	0.300	0.170	0.670	0.015	0.001	0.270	0.040	0.046	0.023	0.030	0.000	0.000
HF	T6084	6084	0.320	0.190	0.720	0.013	0.001	0.290	0.030	0.034	0.005	0.020	0.000	0.000
HF	T65030	65030	0.300	0.170	0.650	0.010	0.002	0.270	0.060	0.056	0.032	0.030	0.000	0.000
HF	T64060	64060	0.300	0.170	0.670	0.012	0.002	0.290	0.040	0.062	0.035	0.030	0.000	0.000
HF	T65451	65451	0.320	0.180	0.690	0.011	0.000	0.280	0.080	0.049	0.027	0.030	0.000	0.000
CF	T65956	65956	0.310	0.180	0.670	0.008	0.001	0.310	0.050	0.065	0.017	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°:  
 13024731 13064753 13029801 13048502 13041523  
 13023841 13029442 13031804 13032042 13047576  
 13041523  
 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.

Nota:  
 Formado en caliente a 820°C-980°C, enfriado al aire.  
 Hot formed fittings in a range from 820°C to 980°C, cooled in still air.  
 Nota:  
 Colado formado normalizado a 940°C max.  
 Cold formed normalized at 940°C max.  
 Tiempo de permanencia 10'.  
 Holding time 10'.  
 Inspección Dimensional: Satisfactoria.  
 Visual dimensional check: Satisfactory.  
 HF: FORMADO EN CALIENTE/HOT FORMED  
 CF: FORMADO EN FRIO/COLD FORMED

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

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.