

**CERTIFICADO DE CALIDAD  
INSPECTION CERTIFICATE**  
(DIN EN 10204:2004E - ISO 10474.3.1.B)

Tubos de Acero de México, S.A.  
Carr. Mty.-T Jaredo Km 24.2  
Apartado Postal 43  
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Vendido a:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No:	2787 - 2830	Lista de Empaque:	9 1 3 4	Fecha/Date:	30 de Abril de 2007
Sold to:		Customers Order No:		Packing List:		Factura/Invoice:	Bocas / Ends
Dimensiones y tolerancias / Dimension and tolerances						Biselado / Bevelled ends	
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.							

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 HB	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	S49639	50	CODO 6 X 45° CED-STD	316	479	32	88				
2	S33538	5	CODO 4 X 90° R.I. CED-XS	300	480	51	116				
3	S20021	64	CODO 4 X 90° R.I. CED-XS	316	487	36	111				
4	S21172	25	CODO 4 X 90° R.I. CED-XS	278	467	39	105				
5	S48650	6	CODO 4 X 90° R.I. CED-XS	332	478	36	107				
6	S30680	50	RED. CONC. 2 1/2 X 2 CED-STD	332	472	36	124				
7	T29530	10	RED. CONC. 14 X 12 CED-STD	275	462	36	133				
8	T28420	2	CODO 12 X 45° SHC-80	284	478	46	117				
9	T28691	3	CODO 12 X 45° SHC-80	295	476	49	116				
10	T32956	10	RED. CONC. 8 X 5 CED-STD	302	484	34	100				
11	S30680	50	RED. CONC. 2 1/2 X 1 1/2 CED-STD	332	472	36	124				

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C.E.	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S49639	49639	0.318	0.180	0.750	0.010	0.020	0.300	0.030	0.055	0.010	0.017	0.001	0.000
HF	S33538	33538	0.305	0.170	0.720	0.012	0.002	0.280	0.040	0.046	0.010	0.021	0.001	0.001
HF	S20021	20021	0.344	0.200	0.790	0.011	0.001	0.310	0.040	0.024	0.010	0.014	0.001	0.002
HF	S21172	21172	0.319	0.180	0.780	0.012	0.001	0.290	0.020	0.021	0.010	0.016	0.001	0.002
HF	S48650	48650	0.332	0.190	0.750	0.010	0.001	0.300	0.050	0.040	0.010	0.028	0.001	0.001
CF	S30680	30680	0.329	0.190	0.730	0.014	0.002	0.270	0.040	0.054	0.020	0.028	0.001	0.001
CF	T29530	29530	0.310	0.180	0.650	0.008	0.004	0.270	0.040	0.070	0.026	0.040	0.000	0.000
HF	T28420	28420	0.310	0.170	0.680	0.009	0.001	0.290	0.060	0.089	0.037	0.040	0.000	0.000
HF	T28691	28691	0.310	0.170	0.680	0.010	0.002	0.290	0.080	0.085	0.021	0.030	0.000	0.000
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	S30680	30680	0.329	0.190	0.730	0.014	0.002	0.270	0.040	0.054	0.020	0.028	0.001	0.001

Notas: Formado en caliente a 620°C-980°C, enfriado al aire.  
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.

Nota: Formado en frío normalizado a 940°C max.  
Cold formed normalized at 940°C max.

Tempo de permanencia 10'.  
Holding time 10'.

Inspección Dimensional: Satisfactoria.  
Visual dimensional check: Satisfactory.

HF: FORMADO EN CALENTE/HOT FORMED  
CF: FORMADO EN FRIOCALDO 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