



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

Tubos de Acero de Mexico, S.A.
Carr. Mty-Laredo Km 24.2
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Vendido a:	PLESA ANAHUAC Y CIA. S.A. DE C.V.	Pedido del Cliente No:	4107 - 4167	Lista de Empaque:	10220	Fecha/Date:	19 de Febrero de 2008
Sold to:		Customers Order No:		Packing List:		Factura/invoice:	Bocas / Ends Biselado / Bevelled ends
Especificaciones y Grados / Standard or Specification and Steel Grade							
Seamless Fittings according to ASTM A 234 "M" WPS-97, A234 "M" WPS-05a, NACE MR 0175-2003							
Conform to ASME II Ed. 2001 ASME SA-234 "M", Grade WPB.							
ASME B 16.9 - 2003 and ASME B 16.28 - 1994							

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	S24951	20	CODO 6 X 90° R. C. CED-STD	289	472	35	97					
2	T36140	12	CODO 8 X 90° R. I. CED-XS	310	468	42	88					
3	T37920	24	CODO 8 X 90° R. I. CED-XS	308	481	43	89					
4	T36861	2	CODO 8 X 90° R. I. CED-XS	306	476	40	85					
5	T36485	32	CODO 8 X 90° R. I. CED-XS	306	496	40	89					
6	T36431	160	CODO 6 X 90° R. I. CED-XS	302	477	38	116					
7	T37919	120	CODO 8 X 90° R. I. CED-STD	320	500	39	98					
8	S20540	2	CODO 4 X 90° R. I. CED-XS	283	477	33	106					
9	S20539	128	CODO 4 X 90° R. I. CED-XS	272	459	39	102					
10	T33435	4	CODO 12 X 90° R. I. CED-40	340	492	35	86					
11	T34322	3	CODO 12 X 90° R. I. CED-40	365	505	36	82					

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	S24951	24951	0.320	0.180	0.710	0.012	0.001	0.280	0.050	0.047	0.010	0.021	0.001	0.001
HF	T36140	36140	0.310	0.170	0.670	0.006	0.001	0.270	0.050	0.088	0.039	0.040	0.000	0.000
HF	T37920	37920	0.310	0.180	0.670	0.008	0.001	0.270	0.040	0.054	0.022	0.030	0.000	0.000
HF	T36861	36861	0.320	0.180	0.680	0.007	0.001	0.290	0.050	0.039	0.044	0.030	0.000	0.000
HF	T36485	36485	0.320	0.180	0.760	0.011	0.002	0.290	0.030	0.063	0.019	0.030	0.000	0.000
HF	T36431	36431	0.310	0.170	0.690	0.012	0.002	0.280	0.050	0.066	0.020	0.030	0.000	0.000
HF	T37919	37919	0.320	0.180	0.700	0.010	0.001	0.280	0.050	0.063	0.017	0.040	0.000	0.000
HF	S20540	20540	0.320	0.180	0.770	0.013	0.001	0.280	0.050	0.038	0.010	0.022	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
HF	T33435	33435	0.310	0.180	0.670	0.010	0.002	0.270	0.050	0.058	0.034	0.030	0.000	0.000
HF	T34322	34322	0.300	0.170	0.650	0.009	0.002	0.290	0.050	0.070	0.029	0.040	0.000	0.000

Notas:
Formado en caliente a 820°C-880°C, enfriado al aire.
Hot formed at a range from 820°C to 880°C, cooled in air.
Cald formado normalizado a 840°C max.
Cold formed normalized at 840°C max.
Tiempo de permanencia 10'.
Holding time 10'.
Inspeccion Dimensional: Satisfactoria.
Visual dimensional check: Satisfactory
CF: FORMADO EN FRIOCALDO FORMED

Notas:
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. WILDO GALLEGOS GALVAN
CC-008