

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

Tubos de Acero de México, S.A.
Carr. Mty-Laredo Km 24.2
Aparito Postal 43
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Vendido a: PLESA ANAHUAC Y CIA. S.A. DE C.V.
Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.

Pedido del Cliente No: 2504
Customers Order No: 2504

Lista de Empaque: 8861
Packing List: 8861

Fecha/Date: 7 de Febrero de 2007

Especificaciones y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM A 234-97, A 234-05a, NACE MR 01-75-2003
Conform to ASME II Eq. 2001 ASME SA-234, Grade WPB

Dimensiones y tolerancias / Dimension and tolerances
ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Factura/Invoice: Bocas / Ends
Biselado / Bevelled ends

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. RUPURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules	
1	S45625	90	CODO 6 X 45° CED-STD	306	478	36	88	12.19 x 2.19 x 2.19	103	103	103	103	
2	S46976	200	CODO 4 X 45° CED-STD	310	470	34	113	12.19 x 2.19 x 2.19	103	103	103	103	
3	S47235	100	CODO 3 X 45° CED-STD	343	496	33	132	12.19 x 2.19 x 2.19	103	103	103	103	
4	S45663	48	CODO 2 X 45° CED-STD	344	487	34	114	12.19 x 2.19 x 2.19	103	103	103	103	
5	S45664	100	CODO 2 X 90° R.I. CED-XS	309	496	34	122	12.19 x 2.19 x 2.19	103	103	103	103	
6	S45663	200	CODO 2 X 90° R.I. CED-STD	344	487	34	114	12.19 x 2.19 x 2.19	103	103	103	103	
7	T29863	160	CODO 6 X 90° R.I. CED-XS	306	468	40	86	12.19 x 2.19 x 2.19	103	103	103	103	
8	T25993	40	CODO 10 X 90° R.I. CED-STD	302	470	34	109	12.19 x 2.19 x 2.19	103	103	103	103	
9	S46693	48	CODO 2 1/2 X 45° CED-STD	308	495	32	118	12.19 x 2.19 x 2.19	103	103	103	103	
10	S46694	25	RED. CONC. 3 X 2 1/2 CED-STD	311	489	31	124	12.19 x 2.19 x 2.19	103	103	103	103	
11	T19984	50	RED. CONC. 6 X 4 CED-STD	311	479	38	128	12.19 x 2.19 x 2.19	103	103	103	103	

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	S45625	45625	0.336	0.190	0.790	0.012	0.003	0.290	0.040	0.042	0.010	0.018	0.001	0.002
HF	S46976	46976	0.339	0.190	0.780	0.008	0.001	0.270	0.040	0.037	0.030	0.032	0.001	0.002
HF	S47235	47235	0.321	0.180	0.760	0.011	0.001	0.280	0.040	0.032	0.010	0.030	0.001	0.001
HF	S45663	45663	0.314	0.180	0.730	0.009	0.001	0.300	0.030	0.022	0.020	0.017	0.001	0.002
HF	S45664	45664	0.341	0.200	0.770	0.010	0.001	0.300	0.030	0.022	0.020	0.017	0.001	0.002
HF	S45663	45663	0.314	0.180	0.730	0.009	0.001	0.300	0.030	0.022	0.020	0.017	0.001	0.002
HF	T29863	29863	0.300	0.170	0.660	0.006	0.001	0.270	0.040	0.070	0.024	0.030	0.000	0.000
HF	T25993	25993	0.320	0.180	0.680	0.007	0.003	0.280	0.050	0.070	0.027	0.030	0.000	0.000
HF	S46693	46693	0.313	0.180	0.700	0.012	0.001	0.270	0.050	0.034	0.010	0.021	0.001	0.002
CF	S46694	46694	0.324	0.190	0.750	0.008	0.001	0.270	0.030	0.023	0.001	0.017	0.001	0.001
CF	T19984	19984	0.274	0.150	0.540	0.007	0.004	0.180	0.070	0.128	0.042	0.050	0.000	0.000

Notes:
Hot formed fittings in a range from 620°C to 960°C, cooled in still air.
Cold formed normalized at 940°C max.
Holding time 10".

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