

CERTIFICADO DE CALIDAD INSPECTION CERTIFICATE

(DIN EN 10204:2004E - ISO 10474.3.1.B)

Tabos de Acero de México, S.A.
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Vendido a: **TUVANSA MONTERREY**
 Pedido del Cliente No: **MTY870**
 Customers Order No: **MTY876 - MTY875**
 Dimensiones y tolerancias / Dimension and tolerances
 ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Sold to: **TUVANSA MONTERREY**
 Especificaciones y Grados / Standard or Specification and Steel Grade
 Seamless Fittings according to ASTM A 234-97, A 234-98a, NACE MR 01-76-2003
 Conform to ASME II Ed. 2001 ASME SA-234, Grade WPB

Numero: **17218**
 Pagina/Page: **1 DE 1**

Fecha/Data: **17 de Enero de 2007**

Lista de Empaque: **8807**
 Packing List: **Bocas / Ends**
Biselado / Bevelled ends

Factura/Invoice: **8807**

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION		PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
ART. ITEM	COLADA HEAT CODE	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPATURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	T29863	6000 6 X 45' CED-STD	342	476	35	99				
2	T29862	6000 6 X 45' CED-STD	312	475	39	86				
3	T31850	6000 10 X 45' CED-STD	326	491	39	124				
4	S30680	RED. CONC. 2 1/2 X 2 CED-STD	332	472	35	124				
5	T29889	TEE RED. 8 X 4 CED-XS	298	474	39	106				
6	S43382	RED. CONC. 4 X 2 CED-STD	305	473	41	111				
7	S46694	RED. CONC. 4 X 2 CED-STD	317	489	33	153				
8	T22407	RED. CONC. 6 X 3 CED-STD	307	479	34	109				
9	T19934	RED. CONC. 6 X 3 CED-STD	311	479	38	128				
10	T28071	RED. CONC. 6 X 3 CED-STD	363	502	31	149				
11	T23390	RED. CONC. 6 X 3 CED-STD	324	489	42	120				

PROCESO PROCESS	COLADA HEAT CODE	COLADAMATER M.P. MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS											
			%C	%E	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
BF	T29863	29863	0.170	0.006	0.670	0.006	0.001	0.280	0.050	0.071	0.026	0.040	0.000	0.000
BF	T29862	29862	0.170	0.007	0.670	0.007	0.280	0.070	0.074	0.034	0.040	0.000	0.000	
BF	T31850	31850	0.190	0.011	0.660	0.011	0.280	0.050	0.075	0.023	0.030	0.000	0.000	
CF	S30680	30680	0.190	0.014	0.730	0.014	0.270	0.040	0.054	0.030	0.028	0.001	0.001	
BF	T29889	29889	0.160	0.007	0.660	0.007	0.270	0.050	0.072	0.031	0.040	0.000	0.000	
CF	S43382	43382	0.190	0.012	0.710	0.012	0.290	0.040	0.048	0.030	0.021	0.001	0.001	
CF	S46694	46694	0.170	0.008	0.750	0.008	0.270	0.030	0.023	0.001	0.017	0.001	0.001	
CF	T22407	22407	0.170	0.013	0.690	0.013	0.270	0.050	0.055	0.025	0.039	0.000	0.000	
CF	T19934	19934	0.150	0.007	0.530	0.007	0.180	0.070	0.128	0.042	0.050	0.000	0.000	
CF	T28071	28071	0.170	0.011	0.670	0.011	0.280	0.070	0.087	0.044	0.040	0.000	0.000	
CF	T23390	23390	0.170	0.007	0.690	0.007	0.280	0.030	0.058	0.034	0.030	0.000	0.000	

Notas:
 Formado en caliente a 620°C-940°C, enfriado al aire.
 Hot formed in range from 620°C to 940°C, cooled to air.
 Mty Formado en frío normalizados a 940°C máx.
 Cold formed normalized at 940°C máx.
 Tiempo de permanencia 10'.
 Holding time 10'.
 Inspección Dimensional: Satisfactoria.
 Visual dimensional check: Satisfactory.
 HF: FORMADO EN CALIENTE/HOT FORMED
 CF: FORMADO EN FRIOLDO/COLD 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**