



Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km 24.2  
Apartado Postal 43  
(65550) C. de Flores, N.L. Méx.  
(52) 81 8305 9600 tel  
(52) 81 8305 9620 fax

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

Numero: 20189  
Pagina/Page: 1 DE 1

Fecha/Date: 28 de Abril de 2008  
Factura/Invoice: 10428  
Bocas / Ends: Biselado / Bevelled ends

Lista de Empaque: 10428  
Packing List:

Proveedora de Materiales Ancer, S.A.  
Pedido del Cliente No: 5185 - 5196  
Customers Order No:  
Dimensiones y tolerancias / Dimension and tolerances

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	T37883	8	CODO 16 X 90° R.I. CED-XS	325	485	45	93					
2	T35698	4	TEE 6 CED-XS	319	479	36	86					
3	T38264	11	TEE 6 CED-XS	322	484	31	105					
4	T37091	10	TEE 6 CED-XS	312	490	37	100					
5	T37795	20	RED. CONC. 8 X 4 CED-STD	315	490	42	107					
6	T29807	16	CODO 10 X 90° R.I. CED-20	340	495	38	88					
7	S22312	136	CODO 2 1/2 X 90° R.I. CED-STD	324	498	30	123					
8	T34054	4	TEE 10 CED-20	328	488	31	110					
9	T38037	8	CODO 12 X 90° R.I. CED-XS	306	500	42	122					
10	S22135	50	CODO 3 X 45° CED-XS	312	480	37	120					
11	T27926	1	CODO 10 X 45° CED-20	349	487	34	86					

ANALISIS QUIMICO / CHEMICAL ANALYSIS													
PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T37883	37883	0.330	0.180	0.011	0.003	0.280	0.040	0.057	0.013	0.030	0.000	0.000
HF	T35698	35698	0.310	0.180	0.009	0.001	0.280	0.040	0.051	0.024	0.030	0.000	0.000
HF	T38264	38264	0.290	0.170	0.011	0.001	0.250	0.040	0.047	0.006	0.030	0.000	0.000
HF	T37091	37091	0.310	0.180	0.006	0.001	0.280	0.050	0.054	0.018	0.030	0.000	0.000
CF	T37795	37795	0.310	0.180	0.010	0.001	0.280	0.050	0.054	0.012	0.040	0.000	0.000
HF	T29807	29807	0.310	0.170	0.007	0.003	0.280	0.060	0.084	0.048	0.040	0.000	0.000
HF	S22312	22312	0.320	0.180	0.011	0.001	0.300	0.030	0.019	0.010	0.011	0.001	0.002
HF	T34054	34054	0.320	0.180	0.009	0.002	0.300	0.050	0.068	0.040	0.030	0.000	0.000
HF	T38037	38037	0.330	0.190	0.011	0.004	0.250	0.060	0.071	0.023	0.040	0.000	0.000
HF	S22135	22135	0.320	0.170	0.008	0.001	0.280	0.040	0.025	0.010	0.018	0.001	0.001
HF	T27926	27926	0.310	0.170	0.013	0.003	0.300	0.080	0.080	0.027	0.040	0.000	0.000

**Notas:**  
Formed in caliente a 620°C-900°C, enfriado al aire; Formado en frio normalizado a 840°C max.  
Time of permanencia 10'.  
Inspección Dimensional: Satisfactoria.  
HF: FORMADO EN CALIENTE/HOT FORMED  
CF: FORMADO EN FRIOCOLD FORMED

**Notes:**  
Hot formed fittings in a range from 620°C to 900°C, cooled in air air.  
Cold formed normalized at 840°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas 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) conformance to ASTM A106 Grade B N°. 8009623 7039850 8012629 8000518 8008710 6038771 379462 7048264 8007966 381899 6038778

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.

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is prominently marked on each fitting.

Jefe de Calidad: *[Signature]*  
Quality Manager: *[Signature]*

INC. WALTER GALLEGOS GALVAN CC-008