

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

Vendido a: **PIESA ANAHUAC** Pedido del Cliente No: **22 68** Fecha/Date: **11 de Julio de 2005**  
 Sold to: **PIESA ANAHUAC** Customers Order No: **Dimensiones y tolerancias / Dimension and tolerances**  
 Especificaciones y Grados / Standard or Specification and Steel Grade **ASME B 16.9 and ASME B 16.28 edition 2001**  
 See/seeas Filings according to ASTM A 234-97, A234-02 / ASME A54 234 WPA.  
 NACE MR 01 75 ed. 02 - Conforme to ASME II Ed. 2001

Numero: **14405** Pagina/Page: **1 DE 1**  
 Lista de Empaque: **7594** Factura/Invoice: **Bocas / Ends**  
 Packing List: **11 de Julio de 2005** Biselado / Bevelled ends

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION			PRUEBAS MECANICAS / MECHANICAL TEST			PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C						
ART ITEM	COLADA HEAT CODE	CANTIDA QUANTITY	DESCRIPCION / DESCRIPTION	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	S24350	100	CODO 2 X 90 RL XS	313	460	39	130					
2	T20958	29	RED. CONC. 6 X 4 STD	307	492	43	126					
3	T19194	1	RED. CONC. 6 X 4 STD	294	459	44	110					
4	T22407	15	RED. CONC. 6 X 3 STD	302	476	42	124					
5	TFE6	10	CODOS 2 1/2 X 45 XS	331	481	41	123					
6	T21445	228	CODO 4 X 90 RL STD	334	467	39	120					
7	T22033	20	TEE 5 STD	330	466	37	170					
8	T22033	2	TEE 5 XS	330	466	37	170					
9	S22020	5	CODO 5 X 45 XS	297	491	46	140					

ANALISIS QUIMICO / CHEMICAL ANALYSIS														
PROCESO	COLADA HEAT CODE	COLADAMOTHER PIPE	%C	%E	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	S24350	24350	0.318	0.120	1.050	0.009	0.001	0.260	0.060	0.062	0.020	0.035	0.001	0.001
CF	T20958	20958	0.352	0.190	0.840	0.009	0.002	0.280	0.040	0.077	0.034	0.030	0.000	0.000
CF	T19194	19194	0.308	0.170	0.670	0.008	0.003	0.260	0.050	0.064	0.045	0.040	0.000	0.000
CF	T22407	22407	0.306	0.170	0.690	0.010	0.002	0.270	0.050	0.055	0.025	0.030	0.000	0.000
HF	TFE6	29808	0.332	0.190	0.720	0.008	0.001	0.290	0.050	0.060	0.020	0.060	0.001	0.000
HF	T21445	21445	0.323	0.170	0.780	0.008	0.002	0.300	0.050	0.083	0.024	0.040	0.000	0.000
CF	T22033	22033	0.313	0.170	0.700	0.009	0.002	0.270	0.060	0.061	0.040	0.030	0.000	0.000
CF	T22033	22033	0.313	0.170	0.700	0.009	0.002	0.270	0.060	0.061	0.040	0.030	0.000	0.000
HF	S22020	22020	0.338	0.190	0.780	0.009	0.001	0.310	0.040	0.050	0.020	0.030	0.001	0.001

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderas o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima conforme ASTM A109Grades con N°: **05010778**  
 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 certs conform to ASTM A106 Grada B N°: **05010163**  
 Este material cumple con los requerimientos especificados en la orden.  
 The material of this certificate meet number mentioned above in compliance with the requirements specified in the order.

Formato en caliente a 780°C/940°C, enfriado al aire. Formado en frio normalizado a 840°C max. Tiempo de permeancia 10'. Inspeccion Dimensional: Satisfactoria. Visual dimensional check: Satisfactory.  
 Formado en caliente a 780°C/940°C, enfriado al aire. Formado en frio normalizado a 840°C max. Tiempo de permeancia 10'. Inspeccion Dimensional: Satisfactoria. Visual dimensional check: Satisfactory.  
 Holding time 10'  
 Jefe de Aseguramiento de Calidad: **ING. JOSE MARTINEZ MACIAS**  
 Quality Assurance Coordinator  
 CC-008