



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

Empresas Rigas S.A. Inc. C.V.  
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Vendido a: VALVULAS Y TUBOS DE MEXICO, S.A. DE C.V.  
Pedido del Cliente No: 3938, 3985, 3992  
Fecha/Date: 31 de agosto de 2004

Sold to: DIMENSIONES Y TOLERANCIAS / Dimension and tolerances  
Customers Order No: 6980  
Factura/Invoice: Bocsas / Ends  
Biselado / Beveled ends

Specificaciones y Grados / Standard or Specification and Steel Grade  
ASME B 16.9 and ASME B 16.28 edition 2001

Seamless Fittings according to ASTM/ASME A53 234 WPB - NACE MR  
01.75 ed. 02 - Conform to ASME II Ed. 2001

DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION		PRUEBAS MECANICAS / MECHANICAL TEST				PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C					
T. TEM	COLADA HEAT CODE	CANTIDA QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (Mpa)	ESF. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. % <sup>2"</sup>	DUREZA HARNNESS HB	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	SSVS	80	CONC. RED. 24" X 2" SCH-STD.	339	488	29	128				
2	SZLS	1200	ELIS 14" X 90" I.R. SCH-STD.	367	521	51	133				
3	TOCC	6	TEE 14" SCH-STD.	366	505	48	143				
4	TOCC	40	CONC. RED. 6" X 4" SCH-STD.	309	452	45	126				
5	THR6	12	ELIS 14" X 90" I.R. SCH-STD.	315	472	45	139				
6	THR6	35	TEE 6" SCH-STD.	313	481	44	141				
7	THR6	9	ELIS 12" X 45" SCH-STD.	324	493	43	139				
8	THS6	24	TEE 10" SCH-STD.	277	483	31	139				
9	THV6	320	TEE 4" SCH-STD.	310	473	42	141				
10	TI66	20	ELIS 6" X 90" I.R. SCH-XR.	300	456	43	139				
11	TI66	6	ELIS 16" X 45" SCH-STD.	322	482	46	141				

**ANALISIS QUIMICO / CHEMICAL ANALYSIS**

PROCESO PROCESS	COLADA HEAT CODE	COLAS/HEAT M. ANOTHER PIPE	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%Nb
CF	SSVS	22039	0.334	0.190	0.760	0.012	0.001	0.310	0.030	0.050	0.020	0.050	0.001
HF	SZLS	25296	0.324	0.180	0.790	0.010	0.002	0.290	0.030	0.040	0.010	0.020	0.001
CF	TOCC	13590	0.332	0.190	0.660	0.011	0.003	0.260	0.070	0.072	0.056	0.030	0.000
CF	THR6	15926	0.295	0.170	0.680	0.005	0.002	0.290	0.005	0.008	0.037	0.040	0.000
HF	THR6	16532	0.198	0.060	0.660	0.007	0.004	0.270	0.060	0.088	0.038	0.040	0.000
CF	THR6	16432	0.323	0.180	0.700	0.013	0.001	0.260	0.070	0.069	0.030	0.030	0.000
HF	THR6	16323	0.325	0.190	0.670	0.012	0.003	0.280	0.050	0.078	0.030	0.030	0.000
CF	THS6	15511	0.347	0.190	0.790	0.008	0.003	0.100	0.050	0.087	0.032	0.050	0.000
CF	THV6	16600	0.310	0.180	0.660	0.010	0.002	0.273	0.040	0.072	0.027	0.030	0.000
HF	TI66	17195	0.304	0.170	0.670	0.011	0.002	0.280	0.040	0.083	0.034	0.030	0.000
HF	TI66	17005	0.315	0.180	0.680	0.014	0.002	0.250	0.050	0.062	0.026	0.030	0.000

Confirmamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son veridicos o una copia fiel de los certificados enviados por el Fabricante al proveedor de Material Prima 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 certs. N°

152468 164723 03018838

04008482 04010017 04009336

40092721 04009399 04012893

04014025 04015130

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.

Controlado en caliente a 780°C/450°C, enfriado al aire / Furnished in the normalized a 840°C max.

Temperatura de entrega: 10° / Delivery time: 10°

Inspeccion Dimensional Satisfactoria / Visual dimension check Satisfactory

CF FORMADO EN CALIENTE/NOT FORMED / CF FORMADO EN FRIJO/COLD FORMED

Gerente de Aseguramiento de Calidad: Quality Assurance Manager: **ING. JOSE MARTINEZ MACIAS**

CC-008