

CLIENTE / Customer / Client

TUBOS CONEX. Y TANQUES, S.A. C.V.
AV. VALLE DE LAS ALAMEDAS, 66-C
COL. SAN FRANCISCO CHILPAN
54940 TULITLAN-EDO. DE MEXICO

CERTIFICADO DE INSPECCION
Works Certificate - Certificat d'Usine

DIN 50049 / 3.1.B.
EN 10204 / 3.1.B.

FECHA:
Date-Date: 08/07/2004

N.º
No.-N.º
95016

HOJA:
Page: 2



PRODUCTO **BRIDAS**
Article - Product
SU PEDIDO N.º
Your Order No. **7988 (02.03.04)**
Votre Cde. N.º

NORMAS APLICABLES **ASME B16.5-96**
Requirements - Normes applicables

MATERIAL CORRESPONDIENTE **ASTMA105N-02**
Material Correspondent - Qualité **ASME SA105N**

MODO DE FUSION (*) **NACE MR-01-75/03**
Steel making - Elaboration de l'acier
E = Elec. Y = Oxígeno Básico

DE
of. - de **03/03/2004**

Certified acc. PED 97/23/EC
by TÜV Rheinland
N.º 01 202 E/Q 02 7443

N.º: 922164

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MARCA DEL FABRICANTE
Mark of factory
Marque du fabricant



40716

DEPARTAMENTO
Section
Department

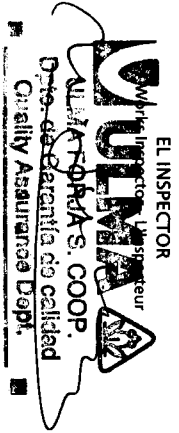
GARANTIA CALIDAD

PARTIDA Item Poste	CANTIDAD Quantity Quantité	DESCRIPCION Description Description	OBSERVACIONES Remarks Observations (*)	COLADA N.º Heat No N.º Couille	RESISTENCIA T. Strength Resist Rupt N/mm2	LIMITE ELAST. Yield Point Limite élastique N/mm2	ALARGAM. Elongation Allongement Lo. 4 d %	ESTRICCION Reduction A Striction %	RESILIENCIA Impact energy Resilience Joules	PROBETA test bar	
										MEIA AVERAGE MOTRINE	°C
28	33	WN 4 150LB S80 RF A105N	NE	101A4	505	300	31.60	62.90			150
50	100	WN 2 300LB S80 RF A105N	NE	205A4	518	325	32.00	64.70			151
51	30	WN 6 300LB S80 RF A105N	NE	220A4	517	322	31.80	64.00			151
54	8	WN 4 600LB S40 RF A105N	NE	121A4	515	327	32.70	65.00			149
55	32	WN 4 600LB S40 RF A105N	NE	122A4	506	311	32.50	63.80			150
58	20	WN 4 600LB S40 RF A105N	NE	122A4	506	311	32.50	63.80			150

COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE

COLADA Heat Couille No	C %	Si %	Mn %	P %	S %	Cr %	Ni %	Mo %	Nb %	V %	Cu %	CEQ %
101A4	0.210	0.190	0.860	0.012	0.028	0.060	0.140	0.018	0.002	0.004	0.190	0.392
121A4	0.190	0.280	0.840	0.014	0.003	0.070	0.160	0.040	0.001	0.002	0.400	0.390
122A4	0.210	0.250	0.820	0.016	0.028	0.120	0.180	0.023	0.003	0.002	0.310	0.408
205A4	0.180	0.280	0.820	0.019	0.002	0.180	0.190	0.060	0.007	0.002	0.370	0.402
220A4	0.190	0.210	0.860	0.010	0.003	0.080	0.150	0.040	0.007	0.002	0.350	0.391

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées



(*) OBSERVACIONES: N.º NORMALIZADO A 900 C Y ENFRIADO EN AIRE EN CALMA
Remarks
Observations

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

Vendido a:	PIESA ANADHAC	Pedido del Cliente No:	100000399	Fecha/Date:	30 de Julio de 2004
Sold to:		Customers Order No:			
Especificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM/ASME ASA 234 WPC - NACE MR 01.75 ed. 02 - Conform to ASME II Ed. 2001	Dimensiones y tolerancias / Dimension and tolerances		Facturas/Invoices:	Bocas / Ends
					Biselado / Bevelled ends
		ASME B 16.9 and ASME B 16.28 edition 2001			

ART. ITEM	COLADA HEAT CODE	CANTIDA QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST			PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
				EST. CEDENCIA YIELD STRENGTH (Mpa)	EST. RUPTURA TENSILE STRENGTH (Mpa)	ELONG. %2"	DUREZA HARDNESS HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules
1	STM6	200	ELLS 4" X 45°	333	489	35	147				
2	DU5	5	CONC. RED. 6" X 24"	352	484	33	137				
3	THF6	10	CONC. RED. 10" X 4"	323	480	44	141				
4	SJY5	50	CONC. RED. 3" X 24"	337	491	34	141				
5	TGU6	15	CONC. RED. 8" X 4"	316	481	42	141				
6	TJJ6	5	CONC. RED. 6" X 3"	315	487	42	141				
7	SZL5	250	ELLS 24" X 90° L.R.	367	521	51	133				
8	SZL5	100	ELLS 2" X 90° L.R.	349	491	35	122				
9	SZY5	50	ELLS 24" X 90° L.R.	331	492	35	129				
10	TGW6	4	RED. TEE 8" X 6"	319	476	44	141				
11	SHL6	128	ELLS 4" X 90° L.R. SCH-STD.	346	494	33	22				

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	STM6		0.325	0.180	0.800	0.014	0.001	0.270	0.030	0.034	0.010	0.017	0.001	0.001
CF	DU5		0.304	0.170	0.670	0.006	0.002	0.260	0.050	0.075	0.024	0.040	0.000	0.000
CF	THF6		0.331	0.190	0.660	0.008	0.003	0.280	0.060	0.080	0.053	0.040	0.000	0.000
CF	SJY5		0.315	0.180	0.730	0.010	0.001	0.310	0.030	0.050	0.010	0.020	0.001	0.001
CF	TGU6		0.333	0.190	0.690	0.009	0.003	0.280	0.050	0.086	0.046	0.050	0.000	0.000
CF	TJJ6		0.329	0.190	0.700	0.020	0.001	0.270	0.060	0.059	0.023	0.030	0.000	0.000
HF	SZL5		0.324	0.180	0.790	0.010	0.002	0.290	0.030	0.040	0.010	0.020	0.001	0.001
HF	SZL5		0.324	0.180	0.790	0.010	0.002	0.290	0.030	0.040	0.010	0.020	0.001	0.001
HF	SZY5		0.307	0.180	0.720	0.009	0.001	0.030	0.010	0.030	0.010	0.010	0.001	0.001
CF	TGW6		0.318	0.180	0.660	0.007	0.004	0.270	0.060	0.086	0.038	0.040	0.000	0.000
HF	SHL6		0.321	0.180	0.740	0.012	0.001	0.300	0.040	0.058	0.020	0.025	0.001	0.001

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 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°:

201028	02007112	04009739
152476	04011137	04014061
164723	165671	165679
04009594	199018	

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.

Notes: Formado en caliente a 780°C-940°C, enfriado al aire. Formado en frío normalizado a 940°C max. Hot formed fittings in a range from 780°C to 940°C, cooled in still air. Cold formed normalized at 940°C max.

Time of permanence 10'. Holding time 10'. Visual dimensional check. Satisfactory.

Inspección Dimensional Satisfactoria.

Formado EN CALIENTE/ HOT FORMED CF FORMADO EN FRIO/ COLD FORMED

Gerente de Aseguramiento de Calidad:
 Quality Assurance Manager:

ING. JOSE MARTINEZ MACIAS

CC-008