

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

Numero: 10232
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Vendido A: **TUBOS CONEXIONES Y TANQUES, S.A. DE C.V.**
Pedido del cliente No: **5497, 5992, 6003**
Lista de empaque: **5961**
Fecha/Date: **MAYO 15 de 2003**

Sold to: **Customers Order No: Dimensiones y tolerancias / Dimension and tolerances**
ASME B 16.9 and ASME B 16.28 edition 2001
Bocas / Ends
Biselado / Bevelled ends

Specifications y Grados / Standard or Specification and Steel Grade
Seamless Fittings according to ASTM/ASME ASA 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					
ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	ESF. CEDENCIA YIELD STRENGTH (MPa)	ESF. RUPTURA TENSILE STRENGTH (MPa)	ELONG. %2"	DUREZA HARDNESS HB	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules
1	JX5	300	CODO R.L. 1 1/4 X 90 CED STD	390	536	54	128	N/A	N/A	N/A	N/A	N/A
2	GCS	8	CODO 2 1/2 X 45 CED XS	294	455	36	135	N/A	N/A	N/A	N/A	N/A
3	LTS	22	CODO 2 1/2 X 45 CED XS	438	492	31	135	N/A	N/A	N/A	N/A	N/A
4	TNS	528	CODO R.L. 3 X 90 CED STD	328	480	39	135	N/A	N/A	N/A	N/A	N/A
5	OKS	148	CODO R.L. 4 X 90 CED STD	372	506	38	131	N/A	N/A	N/A	N/A	N/A
6	TIS	80	CODO R.L. 4 X 90 CED STD	333	486	39	129	N/A	N/A	N/A	N/A	N/A
7	SKS	144	CODO 6 X 45 CED STD	344	502	42	136	N/A	N/A	N/A	N/A	N/A
8	PA4	65	CODO R.L. 6 X 90 CED STD	319	483	32	130	N/A	N/A	N/A	N/A	N/A

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	JX5	21962	0.334	0.180	0.810	0.010	0.001	0.290	0.040	0.040	0.030	0.030	0.001	0.001
HF	GCS	21338	0.315	0.180	0.740	0.009	0.001	0.280	0.030	0.040	0.010	0.010	0.001	0.001
HF	LTS	22281	0.334	0.190	0.760	0.012	0.001	0.270	0.040	0.050	0.020	0.020	0.001	0.001
HF	TNS	24927	0.310	0.180	0.720	0.008	0.001	0.280	0.020	0.030	0.010	0.020	0.001	0.001
HF	OKS	98919	0.307	0.170	0.680	0.010	0.003	0.270	0.050	0.078	0.029	0.040	0.000	0.000
HF	TIS	24823	0.320	0.180	0.780	0.007	0.001	0.300	0.020	0.040	0.010	0.020	0.001	0.001
HF	SKS	10285	0.330	0.190	0.660	0.006	0.001	0.270	0.060	0.090	0.048	0.040	0.000	0.000
HF	PA4	91446	0.284	0.162	0.654	0.004	0.000	0.342	0.025	0.113	0.002	0.001	0.002	0.000

Confirmamos 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°:
152467 149629 152470
162084 02019497 161656
03003333 01010826

Notas: Comado en caliente a 780°C-940°C, enfriado al aire, Formado en frio normalizado a 940°C max. Holding time 10'. Visual dimensional check: Satisfactory. CF: FORMADO EN FRIO/COLD FORMED

Gerente de Aseguramiento de Calidad: **ING. JOSE MARCELO MACIAS**

Quality Assurance Manager: _____

CC-008