

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

Numero: 10233
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Fecha/Dates de 2003

Vendido A: TUBOS CONEXIONES Y TANQUES, S.A. DE C.V.	Pedido del cliente No: 5497, 5992, 6003	Lista de empaque: 5961	Fecha/Dates de 2003
Sold to: ESPECIFICACIONES Y GRADOS / Standard or Specification and Steel Grade	Customers Order No: Dimensiones y tolerancias / Dimension and tolerances	Packing List: Bocas / Ends	
Seamless Fittings according to ASTM/ASME A5A 234 WPB - NACE MR 01.75 ed. 02 -	ASME B 16.9 and ASME B 16.28 edition 2001	Biselado / Bevelled ends	
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	SK5	35	CODO R. L. 6 X 90 CED STD	344	502	42	136	N/A	N/A	N/A	N/A	N/A
2	TF5	25	CODO 8 X 45 CED STD	341	499	40	137	N/A	N/A	N/A	N/A	N/A
3	DV5	60	CODO R. L. 8 X 90 CED STD	321	484	44	140	N/A	N/A	N/A	N/A	N/A
4	GW5	5	RED. CONC. 16 X 8 CED STD	366	492	44	147	N/A	N/A	N/A	N/A	N/A
5	CX5	18	RED. CONC. 6 X 4 CED STD	313	480	30	131	N/A	N/A	N/A	N/A	N/A
6	JK5	12	RED. CONC. 6 X 4 CED STD	303	487	38	137	N/A	N/A	N/A	N/A	N/A
7	RW5	20	RED. CONC. 8 X 6 CED STD	321	476	44	139	N/A	N/A	N/A	N/A	N/A
8	NV5	150	TEE 4 CED STD	305	473	42	135	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	SK5	10285	0.3300	1.90	0.660	0.006	0.001	0.270	0.060	0.090	0.048	0.040	0.000	0.00
HF	TF5	10406	0.3280	1.80	0.760	0.013	0.003	0.290	0.050	0.061	0.025	0.030	0.000	0.00
HF	DV5	96341	0.3130	1.70	0.690	0.007	0.003	0.280	0.050	0.078	0.049	0.040	0.000	0.00
CF	GW5	96772	0.3140	1.80	0.690	0.007	0.003	0.290	0.040	0.070	0.016	0.040	0.000	0.00
CF	CX5	95795	0.2940	1.60	0.670	0.006	0.001	0.270	0.050	0.061	0.031	0.030	0.000	0.00
CF	JK5	97449	0.3450	1.80	0.840	0.006	0.001	0.260	0.050	0.067	0.035	0.050	0.000	0.00
CF	RW5	99646	0.3090	1.80	0.650	0.007	0.000	0.260	0.040	0.080	0.024	0.040	0.000	0.00
CF	NV5	98562	0.3190	1.90	0.670	0.007	0.002	0.280	0.020	0.076	0.029	0.030	0.000	0.00

Notas:
Hot formed fittings in a range from 789°C to 849°C. Cooled in still air.
Formado en caliente a 789°C-849°C, enfriado al aire.
Formado en frío normalizado a 849°C max. Cód formad normalizado at 849°C max.
Tiempo de permanencia 10'. Holding time 10'.
Inspección Dimensional: Satisfactoria. Visual dimensional check: Satisfactory.
HF: 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