

**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**

(DIN EN 10204 3.1.B - ISO 10474 3.1.B)

Vendido A:	TUBOS CONEXIONES Y TANQUES, S.A. DE C.V.	Pedido del cliente No: 3867, 4361, 5400, 5427	Lista de empaque:	5745	Fecha/Date:	ENERO 28 de 2003
Sold to:		Customers Order No:	Packing List:		Bocas / Ends	Biselado / Bevelled ends
Specificaciones y Grados / Standard or Specification and Steel Grade	Seamless Fittings according to ASTM/ASME A5A 234 WPB - NACE MR 01.75 ed. 02 - Conform to ASME II Ed. 2001	Dimensiones y tolerancias / Dimension and tolerances				

ART. ITEM	COLADA HEAT CODE	CANTIDAD QUANTITY	DESCRIPCION / DESCRIPTION	PRUEBAS MECANICAS / MECHANICAL TEST						PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C				
				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	BH5	24	CODO 14 X 45 CED STD	316	461	31	144	N/A	N/A	N/A	N/A	N/A	N/A	
2	NP5	6	CODO 14 X 45 CED STD	334	493	44	140	N/A	N/A	N/A	N/A	N/A	N/A	
3	ON5	1000	CODO R.L. 2 X 90 CED STD	326	473	38	126	N/A	N/A	N/A	N/A	N/A	N/A	
4	OZ5	528	CODO R.L. 3 X 90 CED STD	347	492	39	136	N/A	N/A	N/A	N/A	N/A	N/A	
5	AR5	144	CODO R.L. 4 X 90 CED STD	390	517	35	129	N/A	N/A	N/A	N/A	N/A	N/A	
6	MOS	84	CODO R.L. 4 X 90 CED STD	343	492	36	139	N/A	N/A	N/A	N/A	N/A	N/A	
7	OT5	228	CODO R.L. 4 X 90 CED STD	361	496	41	135	N/A	N/A	N/A	N/A	N/A	N/A	
8	MO5	50	CODO 6 X 45 CED XS	313	495	35	139	N/A	N/A	N/A	N/A	N/A	N/A	
9	GN5	34	CODO R.L. 6 X 90 CED STD	313	479	42	137	N/A	N/A	N/A	N/A	N/A	N/A	

PROCESO PROCESS	COLADA HEAT CODE	COLADA/HEAT M.P./MOTHER PIPE	ANALISIS QUIMICO / CHEMICAL ANALYSIS												
			%C.E.	%C	%Mn	%P	%S	%Si	%Cr	%Cu	%Mo	%Ni	%V	%Nb	
HF	BH5	95597	0.3110	1.80	0.660	0.006	0.002	0.250	0.040	0.066	0.029	0.040	0.000	0.000	0.000
HF	NP5	98777	0.3130	1.80	0.680	0.010	0.003	0.270	0.050	0.068	0.018	0.030	0.000	0.000	0.000
HF	ON5	24041	0.3190	1.80	0.750	0.009	0.002	0.310	0.020	0.050	0.020	0.040	0.001	0.001	0.001
HF	OZ5	23881	0.3250	1.90	0.730	0.011	0.001	0.290	0.030	0.030	0.020	0.020	0.001	0.001	0.002
HF	AR5	48727	0.3200	1.80	0.760	0.010	0.001	0.310	0.030	0.030	0.020	0.020	0.001	0.001	0.000
HF	MOS	98060	0.3410	1.90	0.740	0.008	0.005	0.280	0.060	0.080	0.036	0.050	0.000	0.000	0.000
HF	OT5	24114	0.3180	1.80	0.740	0.008	0.001	0.310	0.030	0.040	0.020	0.020	0.001	0.001	0.001
HF	MO5	97757	0.3130	1.80	0.670	0.007	0.004	0.270	0.050	0.063	0.024	0.040	0.000	0.000	0.000
HF	GN5	96889	0.3090	1.80	0.670	0.008	0.002	0.280	0.030	0.066	0.023	0.030	0.000	0.000	0.000

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

Notas: Hot formed fittings in a range from 780°C to 940°C. Cooled in still air. Cold formed normalized at 940°C max. Holding time 10'. Visual dimensional check. Satisfactory. CF: FORMADO EN FRIO/COLD FORMED

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

CC-008