



**CERTIFICADO DE CALIDAD
INSPECTION CERTIFICATE**
(DIN EN 10204:2004E - ISO 10474 3.1.B)

PROVEEDORA DE MATERIALES ANGER, S.A.

7013 - 7014

Lista de Empaque: 1.513.3

Fecha/Date: 20 de octubre de 2014

DE C.V.

Pedido del Cliente No: Customers Order No:

Packing List:

Factural/invoice: Bocas / Ends

ASTM A 234 WPB-13e

ASME B 16.9 - 2012

PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C

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 HBW	DIMENSIONES SAMPLE DIM mm	1 Joules	2 Joules	3 Joules	PROMEDIO AVERAGE Joules	
12	T64153	3	CODO 12 X 90° R.L. CED-STD	289	485	35	141						
13	T6967	5	RED. CONC. 6 X 5 CED-STD	311	476	39	150						
14	T65622	4	RED. CONC. 14 X 8 CED-XS	318	488	30	145						
15	S32031	19	RED. CONC. 2 X 1 1/2 CED-STD	385	521	50	102						
16	S69900	4	RED. CONC. 2 X 1 1/2 CED-STD	358	495	36	110						
17	S23751	3	RED. CONC. 2 X 1 1/2 CED-STD	345	511	29	120						
18	T69256	20	RED. CONC. 8 X 4 CED-XS	293	471	39	161						
19	T65622	4	RED. CONC. 14 X 12 CED-XS	318	488	30	145						
20	T65622	4	CODO 14 X 90° R.L. CED-40	308	496	45	120						
21	T71195	10	TBE 12 CED-40	309	472	35	137						
22	T71195	15	RED. CONC. 6 X 3 CED-XS	290	479	41	150						

ANALISIS QUIMICO / CHEMICAL ANALYSIS

PROCESO PROCESS	COLADA HEAT CODE	M.P. ANOTHER PIPE	%C.E.	%C	%Mn	%P	%S	%SI	%Cr	%Cu	%Mo	%Ni	%V	%Nb
HF	T64153	64153	0.310	0.180	0.670	0.014	0.001	0.300	0.060	0.055	0.024	0.030	0.000	0.000
CF	T6967	6967	0.310	0.180	0.710	0.006	0.001	0.260	0.030	0.042	0.008	0.020	0.000	0.000
CF	T65622	65622	0.310	0.180	0.660	0.016	0.001	0.280	0.050	0.055	0.011	0.030	0.000	0.000
CF	S32031	32031	0.338	0.190	0.820	0.009	0.001	0.300	0.020	0.031	0.020	0.018	0.001	0.001
CF	S69900	69900	0.329	0.180	0.770	0.014	0.002	0.290	0.050	0.062	0.020	0.029	0.001	0.001
CF	S23751	23751	0.340	0.180	0.800	0.009	0.001	0.300	0.060	0.040	0.030	0.025	0.001	0.002
CF	T69256	69256	0.320	0.180	0.660	0.011	0.001	0.300	0.070	0.070	0.021	0.040	0.000	0.000
CF	T65622	65622	0.310	0.180	0.660	0.016	0.001	0.280	0.050	0.055	0.011	0.030	0.000	0.000
HF	T73977	73977	0.320	0.190	0.670	0.014	0.002	0.280	0.070	0.056	0.013	0.040	0.000	0.000
HF	T71768	71768	0.330	0.180	0.710	0.010	0.002	0.280	0.070	0.073	0.028	0.040	0.000	0.000
CF	T7195	7195	0.310	0.180	0.720	0.005	0.001	0.270	0.030	0.031	0.006	0.030	0.000	0.000

Notes: Hot formed fittings in a range from 820°C to 980°C, cooled in still air. Hot formed fittings in a range from 820°C to 980°C, cooled in still air. Cod formed normalized at 940°C max. Holding time: 10'. Visual dimensional check satisfactory. CF: FORMADO EN FRIO/COLD FORMED. HF: FORMADO EN CALIENTE/HOT FORMED.

Quality Manager / Jefe de Calidad: ING. WALDO GALLEGOS GALVAN

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