



FLM-005-7

PROCARSA, S.A. DE C.V.

**CERTIFICADO DE CALIDAD
DE PRUEBAS MECANICAS Y ANALISIS QUIMICO**

QUALITY CERTIFICATE OF MECHANICAL TESTS AND CHEMICAL ANALYSES

CLIENTE: PLESA ANAHUAC Y CIAS. S.A. DE C.V.
 CUSTOMER:
 PEDIDO CLIENTE / P.O.
 PEDIDO INTERNO / I.O. 15279
 PARTIDA (S)
 ITEMS 508556-90 / 510579-20 / 125268-10 / 127884-10

NUMERO PTM-02361-20
 NUMBER
 FECHA AGOSTO 20, 2012
 DATE

DIAMETRO EXTERIOR : 16" ESPESOR DE PARED : 0.500" GRADO : ASTM A53-B PRESION HIDROSTATICA: 92 Kg/cm² 1,310 PSI
 OUTSIDE DIAMETER : WALL THICKNESS : GRADE : HYDROSTATIC TEST: HOJA 1 D

REQUERIMIENTOS DE PRUEBAS DE TENSION / TENSILE TEST REQUIREMENTS						REQUERIMIENTOS DE ANALISIS QUIMICO % EN PESO / CHEMICAL ANALYSES BY PERCENTAGE OF WEIGHT REQUIREMENTS													
LIMITE ELASTICO / YIELD STRENGTH	ULTIMA TENSION / TENSILE STRENGTH	% ELONG.	LE/UT	C	Mn	P	S	Cb	Cb+V	Cb+V+Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IW
35000 PSI MIN.	60000 PSI MIN.	30 min.	—	0.300 max	1.200 max	0.050 max	0.045 max	—	—	—	—	0.500 max	—	—	0.400 max	0.400 max	0.150 max	—	—

NUM. PROBETA DESCRIPTION	COLADA HEAT	LIMITE ELASTICO YIELD STRENGTH (P.S.I.)	ULTIMA TENSION TENSILE STRENGTH (P.S.I.)	% ELONG. 2"	LE/UT Y.S.T.S	C	Mn	P	S	Cb	V	Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IW
17-11 Tc Ts	117356	70 207	77 549 83 492	33	0.90	0.065	0.95	0.015	0.003	0.046	0.0330	0.003	0.202	0.226	0.030	0.003	0.025	0.026	0.006	0.0055	
22-3 Tc Ts	219091	62 721	72 443 75 174	38	0.86	0.054	0.64	0.016	0.005	0.030	0.0050	0.004	0.178	0.215	0.023	0.003	0.020	0.019	0.005	0.0034	
20-7 Tc Ts	219094	56 898	71 941 74 355	44	0.79	0.064	0.65	0.012	0.005	0.032	0.0040	0.003	0.163	0.218	0.033	0.002	0.017	0.017	0.004	0.0057	
24-6 Tc Ts	219096	60 719	71 403 77 663	39	0.85	0.058	0.64	0.012	0.004	0.032	0.0020	0.004	0.179	0.218	0.031	0.002	0.021	0.022	0.005	0.0048	
34-11 Tc Ts	219097	63 232	71 239 75 689	34	0.88	0.043	0.64	0.014	0.005	0.035	0.0030	0.003	0.184	0.228	0.033	0.003	0.016	0.018	0.004	0.0040	
17-20 Tc Ts	219098	62 229	72 423 74 073	45	0.85	0.049	0.65	0.014	0.005	0.033	0.0030	0.003	0.182	0.212	0.042	0.002	0.014	0.014	0.012	0.0044	
37-10 Tc Ts	219099	60 293	69 146 73 642	43	0.87	0.049	0.66	0.017	0.004	0.034	0.0040	0.003	0.183	0.218	0.035	0.002	0.016	0.015	0.004	0.0041	
1-2 Tc Ts	220035	73 449	88 765 82 136	35	0.82	0.084	0.98	0.018	0.002	0.050	0.0290	0.007	0.235	0.234	0.043	0.002	0.034	0.023	0.007	0.0048	
3-7 Tc Ts	220036	76 272	87 981 82 056	39	0.86	0.077	0.93	0.017	0.003	0.048	0.0280	0.004	0.233	0.223	0.039	0.002	0.029	0.025	0.007	0.0051	
85-4 Tc Ts	221062	72 537	85 287 82 677	36	0.85	0.071	0.93	0.014	0.003	0.040	0.0300	0.003	0.180	0.213	0.032	0.002	0.018	0.021	0.006	0.0060	
77-9 Tc Ts	221063	68 611	81 247 82 341	38	0.84	0.070	0.92	0.016	0.004	0.044	0.0300	0.003	0.187	0.217	0.036	0.003	0.020	0.021	0.006	0.0051	
14-8 Tc Ts	221064	71 028	82 630 82 501	36	0.85	0.075	0.94	0.015	0.004	0.044	0.0300	0.004	0.179	0.224	0.034	0.003	0.020	0.021	0.006	0.0056	
78-9 Tc Ts	221066	68 005	81 120 80 391	40	0.83	0.060	0.93	0.018	0.004	0.044	0.0300	0.004	0.200	0.214	0.028	0.003	0.022	0.022	0.005	0.0061	

CERTIFICAMOS QUE LA TUBERIA AQUÍ DESCRITA CUMPLE Y HA SIDO FABRICADA, MUESTREADA, PROBADA E INSPECCIONADA DE ACUERDO CON LOS REQUISITOS APLICABLES DE LA ESPECIFICACION:

WE CERTIFY THAT THE ABOVE DESCRIBED PIPE HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION, AND MEETS THE APPLICABLE REQUIREMENTS THEREIN

ASTM -10

ING. ALEJANDRO LARCON CAZARES
 JEFE DE LABORATORIO METALURGICO
 METALLURGICAL LABORATORY CHIEF



PROCARSA, S.A. DE C.V.

**CERTIFICADO DE CALIDAD
DE PRUEBAS MECANICAS Y ANALISIS QUIMICO**

QUALITY CERTIFICATE OF MECHANICAL TESTS AND CHEMICAL ANALYSES

CLIENTE: PLESA ANAHUAC Y CIAS. S.A. DE C.V.

CUSTOMER:

PEDIDO CLIENTE / P.O.

PEDIDO INTERNO / I.O. 15279

PARTIDA (S)

ITEMS 508556-90 / 510579-20 / 125268-10 / 127884-10

NUMERO FTM-02361-2012

NUMBER

FECHA

DATE AGOSTO 20, 2012


DIAMETRO EXTERIOR : OUTSIDE DIAMETER : 16"	ESPESOR DE PARED : WALL THICKNESS : 0.500"	GRADO : GRADE : ASTM A53-B	PRESION HIDROSTATICA : HIDROSTATIC TEST : 92 Kg/cm ² 1,310 PSI
-----------------------------------------------	-----------------------------------------------	-------------------------------	------------------------------------------------------------------------------

REQUERIMIENTOS DE PRUEBAS DE TENSION / TENSILE TEST REQUIREMENTS				REQUERIMIENTOS DE ANALISIS QUIMICO % EN PESO / CHEMICAL ANALYSES BY PERCENTAGE OF WEIGHT REQUIREMENTS																
LIMITE ELASTICO / YIELD STRENGTH	ULTIMA TENSION / TENSILE STRENGTH	% ELONG.	L.E./L.T.	C	Mn	P	S	Cb	Cb+V	Cb+V+Ti	Si	Ca	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE Pcm
35000 PSI MIN.	60000 PSI MIN.	30 min.	—	0.300 max	1.200 max	0.050 max	0.045 max	—	—	—	—	0.500 max	—	—	0.400 max	0.400 max	0.150 max	—	—	—

NUM PROBETA DESCRIPTION	COLADA HEAT	LIMITE ELASTICO YIELD STRENGTH (P.S.I.)	ULTIMA TENSION TENSILE STRENGTH (P.S.I.)	% ELONG. 2"	L.E./L.T. Y/S/T.S	C	Mn	P	S	Cb	V	Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE Pcm
86-6 Tc Ts	221067	75 977	90 427 83 753	35	0.84	0.089	0.93	0.014	0.003	0.042	0.0280	0.003	0.175	0.219	0.030	0.002	0.018	0.017	0.006	0.0056		
12-2 Tc Ts	221068	75 052	89 859 85 835	35	0.83	0.090	0.93	0.017	0.003	0.045	0.0280	0.005	0.218	0.238	0.037	0.002	0.019	0.023	0.007	0.0054		
13-10 Tc Ts	221070	69 778	83 961 86 200	40	0.83	0.083	0.92	0.016	0.003	0.043	0.0270	0.004	0.198	0.235	0.020	0.002	0.016	0.019	0.006	0.0058		
39-3 Tc Ts	221072	72 914	83 786 82 830	37	0.87	0.079	0.94	0.016	0.004	0.042	0.0290	0.004	0.191	0.237	0.023	0.002	0.018	0.021	0.007	0.0050		
88-9 Tc Ts	221073	70 788	88 451 83 148	35	0.80	0.074	0.93	0.013	0.003	0.043	0.0280	0.003	0.187	0.229	0.022	0.002	0.020	0.020	0.005	0.0054		
33-4 Tc Ts	221894	68 341	81.015 88 257	39	0.84	0.065	0.95	0.016	0.004	0.040	0.0290	0.003	0.189	0.233	0.046	0.003	0.017	0.013	0.007	0.0052		

CERTIFICAMOS QUE LA TUBERIA AQUÍ DESCRITA CUMPLE Y HA SIDO FABRICADA, MUESTREADA, PRÓBADA E INSPECCIONADA DE ACUERDO CON LOS REQUISITOS APLICABLES DE LA ESPECIFICACION:
ASTM -10

WE CERTIFY THAT THE ABOVE DESCRIBED PIPE HAS BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE FOLLOWING SPECIFICATION, AND MEETS THE APPLICABLE REQUIREMENTS THEREIN


ING. ALEJANDRO ARAGON SAZARES
JEFE DE LABORATORIO METALURGICO
METALLURGICAL LABORATORY CHIEF