

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.

PARTIDA (S)

ITEMS

15289

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

NUMERO
NUMBER

PTM-02454-2012

FECHA
DATE

SEPTIEMBRE 07, 2012

DIAMETRO EXTERIOR :

ESPEJOR DE PARED :

GRADO :

PRESION HIDROSTATICA:

OUTSIDE DIAMETER : 16"

WALL THICKNESS : 0.500"

GRADE : ASTM A53-B

HIDROSTATIC TEST: 92 Kg/cm² 1,310 PSI

HOJA 1 DE 2

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./U.T.	C	Mn	P	S	Cb	Cb+V	Cb+V+Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE P
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	---	---	---

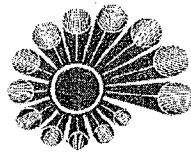
NUM.PROBETA DESCRIPTION	COLADA HEAT	LIMITE ELASTICO YIELD STRENGTH (P.S.I.)	ULTIMA TENSION TENSILE STRENGTH (P.S.I.)	% ELONG. 2"	LE/U.T. Y.S/T.S	C	Mn	P	S	Cb	V	Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE P
19-11 Tc Ts	119570	66 637	74 526 78 390	34	0.89	0.057	0.64	0.012	0.004	0.031	0.0020	0.004	0.191	0.208	0.030	0.002	0.016	0.023	0.005	0.0049		
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		
30-3 Tc Ts	219088	61 278	71 703 75 987	42	0.85	0.059	0.66	0.010	0.004	0.033	0.0030	0.004	0.195	0.208	0.028	0.003	0.016	0.020	0.005	0.0044		
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		
42-9 Tc Ts	219092	55 849	67 437 74 985	45	0.82	0.062	0.65	0.018	0.004	0.032	0.0040	0.004	0.189	0.214	0.020	0.002	0.019	0.018	0.004	0.0048		
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		
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		
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		
83-9 Tc Ts	221065	67 662	81 378 80 964	36	0.83	0.071	0.92	0.013	0.003	0.043	0.0300	0.003	0.165	0.230	0.036	0.002	0.018	0.023	0.006	0.0061		
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		
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		

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. LUIS ALFONSO DE LOS SANTOS RIVERA
JEFE DE LABORATORIO METALURGICO
METALLURGICAL LABORATORY CHIEF



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GRADE : ASTM A53-B

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HOJA 2 DE 2

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./U.T.	C	Mn	P	S	Cb	Cb+V	Cb+V+Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE I
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/U.T. Y.S/T.S	C	Mn	P	S	Cb	V	Ti	Si	Cu	Al	Ca	Cr	Ni	Mo	N	CE IIW	CE
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		

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

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[Handwritten Signature]
 ING. LUIS ALFONSO DE LOS SANTOS RIVERA
 JEFE DE LABORATORIO METALURGICO
 METALLURGICAL LABORATORY CHIEF