



FLM-005-7

PROCARSA, S.A. DE C.V.

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

INSPECTION CERTIFICATE OF MECHANICAL TESTS AND CHEMICAL ANALYSES

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

CUSTOMER:

NUMERO PTM-06715-1-2017

NUMBER

PEDIDO CLIENTE / P.O.

PEDIDO INTERNO / I.O. 16472

FECHA

DATE OCTUBRE 27, 2017

PARTIDA (S)

ITEMS 199046-10 / 199040-20

| | | | |
|---|---|-------------------------------|--|
| DIAMETRO EXTERIOR : OUTSIDE DIAMETER : 16" | ESPEJOR DE PARED : WALL THICKNESS : 0.312" | GRADO : GRADE : ASTM A53-B | PRESION HIDROSTATICA : HIDROSTATIC TEST : 58 Kg/cm ² 820 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./U.T. | C | Mn | P | S | Cb | Cb+V | Cb+V+Ti | Si | Cu | Al | Ca | Cr | Ni | Mo | N | CE IIW | CE Pcm |
| 35000 PSI MIN. | 60000 PSI MIN. | 27 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 IIW | CE Pcm |
|----------------------------|----------------|---|--|----------------|------------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|
| 70-18 Tc Ts | 173494 | 62 028 | 73 353 79 961 | 42 | 0.86 | 0.071 | 1.15 | 0.013 | 0.003 | 0.018 | 0.003 | 0.008 | 0.200 | 0.018 | 0.031 | 0.003 | 0.018 | 0.029 | 0.009 | 0.0055 | | |
| 33-18 Tc Ts | 173495 | 60 247 | 72 707 77 665 | 38 | 0.83 | 0.065 | 1.15 | 0.012 | 0.004 | 0.018 | 0.003 | 0.009 | 0.200 | 0.050 | 0.033 | 0.003 | 0.016 | 0.025 | 0.007 | 0.0055 | | |
| 23-18 Tc Ts | 173496 | 61 795 | 72 244 79 015 | 38 | 0.86 | 0.070 | 1.15 | 0.013 | 0.003 | 0.018 | 0.003 | 0.009 | 0.210 | 0.031 | 0.032 | 0.003 | 0.023 | 0.027 | 0.008 | 0.0055 | | |
| 1-18 Tc Ts | 173497 | 60 259 | 74 484 80 614 | 35 | 0.81 | 0.066 | 1.16 | 0.013 | 0.003 | 0.018 | 0.003 | 0.009 | 0.210 | 0.023 | 0.030 | 0.003 | 0.018 | 0.024 | 0.007 | 0.0055 | | |
| 34-18 Tc Ts | 173499 | 56 500 | 70 372 79 577 | 43 | 0.80 | 0.066 | 1.16 | 0.017 | 0.002 | 0.018 | 0.005 | 0.009 | 0.220 | 0.029 | 0.033 | 0.003 | 0.021 | 0.024 | 0.007 | 0.0055 | | |
| 38-18 Tc Ts | 173500 | 63 140 | 73 153 76 134 | 35 | 0.86 | 0.066 | 1.16 | 0.014 | 0.003 | 0.018 | 0.003 | 0.009 | 0.220 | 0.030 | 0.027 | 0.003 | 0.026 | 0.031 | 0.011 | 0.0054 | | |
| 36-18 Tc Ts | 173501 | 57 522 | 69 600 78 959 | 39 | 0.83 | 0.064 | 1.16 | 0.014 | 0.004 | 0.019 | 0.003 | 0.008 | 0.210 | 0.021 | 0.027 | 0.003 | 0.021 | 0.026 | 0.008 | 0.0055 | | |
| 24-18 Tc Ts | 173502 | 62 795 | 72 177 79 891 | 38 | 0.87 | 0.066 | 1.16 | 0.014 | 0.003 | 0.019 | 0.003 | 0.009 | 0.220 | 0.027 | 0.034 | 0.003 | 0.023 | 0.025 | 0.007 | 0.0055 | | |
| 67-18 Tc Ts | 173503 | 61 990 | 71 676 79 961 | 42 | 0.86 | 0.067 | 1.15 | 0.012 | 0.003 | 0.018 | 0.003 | 0.012 | 0.220 | 0.026 | 0.035 | 0.003 | 0.019 | 0.021 | 0.006 | 0.0054 | | |
| 17-18 Tc Ts | 273767 | 59 470 | 73 398 80 715 | 37 | 0.81 | 0.065 | 1.14 | 0.020 | 0.002 | 0.018 | 0.005 | 0.010 | 0.220 | 0.029 | 0.028 | 0.003 | 0.018 | 0.021 | 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:

ASTM A53

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 ALARCON CAZARES
JEFE DE LABORATORIO METALURGICO
METALLURGICAL LABORATORY CHIEF