



PROCARSA, S.A. DE C.V.

**CERTIFICADO DE CALIDAD
DE PRUEBAS FISICAS-QUIMICAS**

QUALITY CERTIFICATE OF TEST PHYSICALS-CHEMICAL

CLIENTE: TUCOTIA
CLIENTE: TUCOTIA
PEDIDO CLIENTE / P.O. 11345
PARTIDA (S)
ITEMS 39905-10 / 48987-10 / 48977-10
NÚMERO P.T.M.-57044-1-2003

FECHA: DICIEMBRE 16, 2003
DATE

METRO: 20" ESPESOR DE PARED: 0.250" GRADO: ASTM A53-B PRESION HIDROSTATICA: 37 Kg/cm² 520 PSI
METER: 20" WALL THICKNESS: 0.250" GRADE: ASTM A53-B ANALISIS QUIMICO % EN PESO

TENSILE TEST

CHEMICAL ANALYSES PERCENT WEIGHT

| PROBETA SCRIPITION | COLADA HEAT | LIMITE ELASTICO YIELD STRENGTH (F _{0.2}) | ULTIMA TENSION TENSILE STRENGTH (F _U) | % ELONG. % ELONG. | LEANT Y&T'S | C | Mn | P | S | Cb | V | Ti | Si | Cu | Al | Ca | Cr | Ni | Mo | N | Ceq |
|-----------------------|----------------|--|---|----------------------|----------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-----|
| 2-18 Tc Ts | 126596 | 52 617 | 71 957 | 36 | 0.73 | 0.178 | 1.12 | 0.013 | 0.007 | 0.003 | 0.004 | 0.004 | 0.209 | 0.018 | 0.034 | 0.0022 | 0.016 | 0.030 | 0.012 | 0.0037 | |
| 12-15 Tc Ts | 126589 | 50 669 | 77 684 | 34 | 0.71 | 0.171 | 1.11 | 0.017 | 0.008 | 0.001 | 0.004 | 0.004 | 0.228 | 0.020 | 0.045 | 0.0010 | 0.014 | 0.027 | 0.005 | 0.0051 | |
| 32-10 Tc Ts | 135389 | 51 371 | 78 278 | 36 | 0.72 | 0.180 | 1.12 | 0.017 | 0.006 | 0.003 | 0.005 | 0.004 | 0.306 | 0.020 | 0.032 | 0.0032 | 0.024 | 0.015 | 0.009 | 0.0051 | |
| 30-11 Tc Ts | 135391 | 50 633 | 71 952 | 35 | 0.70 | 0.162 | 1.11 | 0.019 | 0.006 | 0.001 | 0.002 | 0.004 | 0.299 | 0.015 | 0.036 | 0.0032 | 0.010 | 0.022 | 0.004 | 0.0054 | |
| 36-4 Tc Ts | 235129 | 47 682 | 77 964 | 38 | 0.68 | 0.164 | 1.12 | 0.016 | 0.005 | 0.001 | 0.001 | 0.003 | 0.257 | 0.012 | 0.040 | 0.0015 | 0.015 | 0.024 | 0.004 | 0.0050 | |
| 61-4 Tc Ts | 235134 | 48 944 | 69 668 | 34 | 0.70 | 0.170 | 1.13 | 0.016 | 0.007 | 0.001 | 0.002 | 0.003 | 0.326 | 0.015 | 0.041 | 0.0029 | 0.017 | 0.025 | 0.004 | 0.0058 | |
| 1-8 Tc Ts | 235794 | 46 101 | 77 691 | 40 | 0.67 | 0.156 | 1.12 | 0.014 | 0.008 | 0.005 | 0.004 | 0.004 | 0.299 | 0.012 | 0.045 | 0.0030 | 0.020 | 0.026 | 0.01 | 0.0056 | |

CONFIRMAMOS QUE LA TUBERIA AQUI DESCRITA CUMPLE Y HA SIDO
REVISADA, MUESTREADA, PROBADA E INSPECCIONADA DE ACUERDO
LOS REQUISITOS APLICABLES DE LA ESPECIFICACION:
ASTM A53-B-99

WE CERTIFY THE PIPE ABOVE MENTIONED ACCOMPLISH AND HAS
BEEN MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN
ACCORDANCE WITH APPLICABLE REQUIREMENTS OF SPECIFICATIONS:

ING. ROSELINDA OSORIO PEREZ
GERENTE DE ASEGURAMIENTO DE CALIDAD
QUALITY ASSURANCE MANAGER