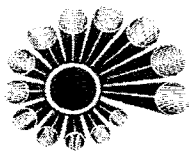


FLM-005-7



PROCARSA, S.A. DE C.V.

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

QUALITY CERTIFICATE OF TEST PHYSICALS-CHEMICAL

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

CUSTOMER:

NUMERO PTM-78586-2010

NUMBER

PEDIDO CLIENTE / P.O.

PEDIDO INTERNO / I.O. 3379

FECHA

DATE DICIEMBRE 28, 2010

PARTIDA (S)

ITEMS 103138-20

| | | | |
|------------------------------|---|-------------------------------------|---|
| DIAMETRO : DIAMETER : 14" | ESPESOR DE PARED WALL THICKNESS 0.250" | GRADO : GRADE : API 5L X-42 PSL1 | PRESION HIDROSTATICA: HIDROSTATIC TEST: 90 Kg/cm ² 1280 PSI 10 Segundos una vez |
|------------------------------|---|-------------------------------------|---|

**PRUEBAS DE TENSION
TENSILE TEST**
**ANALISIS QUIMICO % EN PESO
CHEMICAL ANALYSES PERCENT WEIGHT**

| 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 | Ceq |
|----------------------------|----------------|---|--|----------------|-------------------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|--------|-----|
| 4-25 Tc | 190416 | 54 022 | 65 522 | 39 | 0.82 H | 0.117 | 0.79 | 0.013 | 0.008 | 0.002 | 0.003 | 0.004 | 0.286 | 0.020 | 0.043 | 0.0015 | 0.020 | 0.020 | 0.007 | 0.0062 | |
| Ts | | | 69 970 | | P | 0.120 | 0.81 | 0.012 | 0.007 | 0.001 | 0.004 | 0.003 | 0.280 | 0.016 | 0.038 | 0.0024 | 0.025 | 0.018 | 0.003 | 0.0062 | |
| 11-26 Tc | 190935 | 53 301 | 66 205 | 40 | 0.80 H | 0.120 | 0.79 | 0.010 | 0.005 | 0.002 | 0.002 | 0.003 | 0.278 | 0.010 | 0.038 | 0.0023 | 0.020 | 0.020 | 0.005 | 0.0057 | |
| Ts | | | 69 990 | | P | 0.130 | 0.77 | 0.008 | 0.004 | 0.001 | 0.003 | 0.003 | 0.260 | 0.010 | 0.034 | 0.0031 | 0.022 | 0.020 | 0.002 | 0.0064 | |
| 1-10 Tc | 290576 | 50 748 | 63 133 | 44 | 0.80 H | 0.124 | 0.79 | 0.013 | 0.004 | 0.002 | 0.003 | 0.004 | 0.290 | 0.010 | 0.040 | 0.0015 | 0.040 | 0.020 | 0.007 | 0.0055 | |
| Ts | | | 66 916 | | P | 0.140 | 0.79 | 0.014 | 0.004 | 0.001 | 0.004 | 0.003 | 0.280 | 0.013 | 0.033 | 0.0020 | 0.045 | 0.020 | 0.003 | 0.0060 | |
| 2-20 Tc | 290577 | 53 149 | 65 622 | 42 | 0.80 H | 0.111 | 0.79 | 0.012 | 0.007 | 0.002 | 0.002 | 0.004 | 0.294 | 0.010 | 0.042 | 0.0015 | 0.020 | 0.020 | 0.006 | 0.0049 | |
| Ts | | | 71 957 | | P | 0.120 | 0.81 | 0.010 | 0.007 | 0.001 | 0.003 | 0.003 | 0.280 | 0.007 | 0.036 | 0.0020 | 0.019 | 0.015 | 0.002 | 0.0049 | |

PROCESO DE MANUFACTURA : HFW
 METODO DE PRUEBA NO DESTRUCTIVO : ULTRASONIDO
 STANDARD DE REFERENCIA : TALADRO DE 1/8" Y RANURA N10
 TEMP. MINIMA DE SIMULADO DE NORMALIZADO : 1050 °C
 MUESTRA PARA PRUEBA DE TENSION : DE ACUERDO A API 5L FIG 5, SUBFIG. B
 EXTREMOS : BISELADOS

Tc : Tensión en cuerpo
 Ts : Tension en soldadura
 H : Análisis de olla
 P : Análisis de producto


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

ANSI / ESPECIFICACION API 5L

44ª EDICION, OCTUBRE 1, 2007

FECHA EFECTIVA : OCTUBRE 1, 2008


 ING. ALEJANDRO ALARCÓN CAZARES
 SUPERVISOR DE LABORATORIO METALURGICO
 METALLURGICAL LABORATORY SUPERVISOR