



MAQUINADOS DE ACEROS FORJADOS

CALLE SIN NOMBRE ESQ. RIO HUAYAPANGO MZ. 2 LOTE 55 COLONIA EJIDO DEL SOCORRO
CUAUTITLAN IZCALLI EDO DE MEX. CP. 54740

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|------------------------|------------------------------------|------------------------|---------------|
| CERTIFICADO DE CALIDAD | | CERTIFICADO No. 1258 | |
| | | FECHA: 02-Jul-09 | |
| CLIENTE | PLESA ANAHUAC Y CIAS, S.A. DE C.V. | No. DE ORDEN DE COMPRA | 6640 REF 2060 |

| | |
|---------------------------------------------------------|----------------------------------------|
| ESPECIFICACIONES | PROCESO |
| A 105N - ASTM A 105N - 03/ ASME SA105N/NACE-MR-01-75/03 | FORGED/ROLLED 1150-1200 GRADES CELSIUS |

| | |
|--------------------------------------------------------------------|----------------------------------------------------------------|
| NORMAS Y GRADOS | TRATAMIENTO TERMICO |
| ASME boiler and pressure Vessel SECC II, Code Part A, Edition 2004 | NORMALIZED 900 GRADES CELSIUS AND ALLOWED TO COOL IN STILL AIR |

| PARTIDA | CANTIDAD | DESCRIPCION DEL PRODUCTO | NORMAS APLICABLES | MEDIDA | COLADA |
|---------|----------|-------------------------------|--------------------|--------|--------|
| 01 | 20 | BRIDA A.C THD 150# RF | ASTM A-105-05 | 2" | 3136 |
| 02 | 20 | BRIDA A.C THD 150# RF | ASME SA-105-05 | 2-1/2" | 1268 |
| 03 | 50 | BRIDA A.C S.O 150# RF | ASME B16.5 | 2 | 8936 |
| 04 | 6 | BRIDA A.C S.O 600# RF | NACE MR-0175-03/05 | 3" | JER |
| 05 | 25 | BRIDA A.C S.W SCH-STD 150# RF | | 1" | HHW |

PRUEBAS MECANICAS

| COLADA | RUPTURA (P.S.I.) | CEDENCIA (P.S.I.) | ELONGACION 2% | REDUCCION DE AREA % | DUREZA HB |
|--------|------------------|-------------------|---------------|---------------------|-----------|
| 3136 | 85.254 | 43.564 | 26 | 39 | 85 |
| 1268 | 85.254 | 43.564 | 26 | 39 | 85 |
| 8936 | 85.254 | 43.564 | 26 | 39 | 85 |
| JER | 79.995 | 49.995 | 27 | 42 | 84.0 |
| HHW | 83.027 | 48.996 | 26 | 38 | 84.0 |

% COMPOSICION QUIMICA

| COLADA | C | Mn | Si | P | S | Cr | Ni | Mo | Cu | SN | Al | Nb | V | Ti | Co | As | Sb | Hppm | Nppm | cEq | Cr+Mo | 1) |
|--------|-------|------|------|-------|-------|-------|-------|-------|-------|----|----|----|-------|----|----|----|----|------|------|-----|-------|------|
| 3136 | 0.3 | 0.85 | 0.19 | 0.007 | 0.015 | 0.08 | 0.08 | 0.027 | 0.2 | | | | 0.002 | | | | | | | | | 0.39 |
| 1268 | 0.3 | 0.85 | 0.19 | 0.007 | 0.015 | 0.08 | 0.08 | 0.027 | 0.2 | | | | 0.002 | | | | | | | | | |
| 8936 | 0.3 | 0.85 | 0.19 | 0.007 | 0.015 | 0.08 | 0.08 | 0.027 | 0.2 | | | | 0.002 | | | | | | | | | |
| JER | 0.190 | 0.90 | 0.22 | 0.005 | 0.018 | 0.050 | 0.100 | 0.025 | 0.260 | | | | 0.002 | | | | | | | | | |
| HHW | 0.003 | 0.81 | 0.24 | 0.007 | 0.002 | 0.009 | 0.012 | 0.027 | 0.026 | | | | 0.009 | | | | | | | | | |

NOTA 1) Cr+Ni+Mo+Cu

2 JUL 2009

ENTREGADO
APROBADO

CC-01 REV1.0

PNMG
ELABORO