



Certificate Q5377

|  |   |                          |
|--|---|--------------------------|
| CERTIFICADO DE CALIDAD No.:<br>CERTIFIED TEST REPORT:  | LISTA DE EMPAQUE:<br>PACKING LIST:            | FECHA:<br>DATE:          |
| 7455   | 4684  | JULIO 13 de 2001         |
| VENDIDO A:<br>SOLD TO:   | PEDIDO DEL CLIENTE No.<br>CUSTOMERS ORDER No. | EMBARCADO A:<br>SHIP TO: |
| TUBERIA Y VALVULAS DEL NORTE, S.A. DE C.V.<br>RETORNO SAN BUENAVENTURA NO. 12<br><br>TLALNEPANTLA, EDO DE MEXICO |   | LOS MISMOS               |

**PRUEBAS MECANICAS**

| CANT. | COLADA<br>HEAT CODE | DESCRIPTION                  | ESF. DE CEDENCIA<br>YIELD STRENGTH<br>(PSI) | ESF. RUPTURA<br>TENSILE STRENGTH<br>(PSI) | ELONGACION<br>ELONGATION<br>% 2" | DUREZA<br>HARDNESS<br>HB |
|-------|---------------------|------------------------------|---|---|----------------------------------|--------------------------|
| 371   | MO4                 | CODO R.L. 1 1/4 X 90 CED STD | 49067                                       | 63970                                     | 53                               | 112                      |
| 1640  | FT4                 | CODO R.L. 1 1/2 X 90 CED STD | 51168                                       | 77312                                     | 50                               | 130                      |
| 360   | MO4                 | CODO R.L. 1 1/2 X 90 CED STD | 49067                                       | 63970                                     | 53                               | 112                      |
| 40    | NH4                 | CODO R.C. 3 X 90 CED STD     | 47321                                       | 69179                                     | 36                               | 122                      |
| 21    | LH3                 | CODO R.L. 3 X 90 CED 160     | 48627                                       | 72358                                     | 36                               | 131                      |
| 298   | NJ4                 | CODO R.L. 5 X 90 CED STD     | 44426                                       | 68895                                     | 42                               | 127                      |
| 60    | LS4                 | CODO R.C. 6 X 90 CED STD     | 46060                                       | 70067                                     | 31                               | 119                      |
| 85    | MK4                 | CODO R.L. 6 X 90 CED STD     | 64691                                       | 70990                                     | 32                               | 119                      |
| 170   | NT4                 | CODO R.L. 6 X 90 CED STD     | 45291                                       | 70102                                     | 42                               | 129                      |
| 510   | MM4                 | CODO R.L. 6 X 90 CED STD     | 45902                                       | 71800                                     | 33                               | 122                      |

**ANALISIS QUIMICO**

| COLADA<br>HEAT CODE | C.E.  | C     | Mn    | P     | S     | Si    | Cr    | Cu    | Mo    | Ni    | V     | Nb    |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| MO4                 | 0.318 | 0.180 | 0.740 | 0.011 | 0.001 | 0.300 | 0.030 | 0.060 | 0.010 | 0.030 | 0.001 | 0.001 |
| FT4                 | 0.319 | 0.180 | 0.740 | 0.009 | 0.001 | 0.300 | 0.030 | 0.050 | 0.020 | 0.040 | 0.000 | 0.000 |
| MO4                 | 0.318 | 0.180 | 0.740 | 0.011 | 0.001 | 0.300 | 0.030 | 0.060 | 0.010 | 0.030 | 0.001 | 0.001 |
| NH4                 | 0.318 | 0.180 | 0.740 | 0.011 | 0.002 | 0.300 | 0.030 | 0.053 | 0.020 | 0.020 | 0.001 | 0.000 |
| LH3                 | 0.333 | 0.190 | 0.730 | 0.011 | 0.002 | 0.270 | 0.040 | 0.080 | 0.020 | 0.050 | 0.001 | 0.001 |
| NJ4                 | 0.323 | 0.180 | 0.760 | 0.009 | 0.001 | 0.290 | 0.030 | 0.063 | 0.020 | 0.030 | 0.001 | 0.001 |
| LS4                 | 0.276 | 0.170 | 0.564 | 0.001 | 0.001 | 0.390 | 0.026 | 0.082 | 0.002 | 0.001 | 0.002 | 0.000 |
| MK4                 | 0.281 | 0.178 | 0.540 | 0.001 | 0.000 | 0.277 | 0.022 | 0.107 | 0.006 | 0.001 | 0.002 | 0.000 |
| NT4                 | 0.300 | 0.170 | 0.670 | 0.006 | 0.002 | 0.270 | 0.040 | 0.079 | 0.010 | 0.040 | 0.000 | 0.000 |
| MM4                 | 0.309 | 0.211 | 0.522 | 0.001 | 0.000 | 0.310 | 0.023 | 0.090 | 0.002 | 0.001 | 0.002 | 0.000 |

LOS PRODUCTOS MANUFACTURADOS POR EMPRESAS RIGA, S.A. de C.V. ESTAN CONFORME A LAS SIGUIENTES ESPECIFICACIONES:

CC-008

PRODUCTS MANUFACTURED BY EMPRESAS RIGA, S.A. de C.V. ARE CONFORMING TO FOLLOWING SPECIFICATIONS:

STARTING MATERIAL SEAMLESS PIPE ASTM A-106 GRADE B.

ASTM A-234 WPB, ASME SA234 WPB, ANSI B 16.9 Y ANSI B16.28, NACE MR 0175

CONEXIONES SIN COSTURA, FORJADO EN CALIENTE Y NORMALIZADO  
SEAMLESS FITTINGS, HOT FORMED AND NORMALIZED

GERENTE CONTROL DE CALIDAD:  
QUALITY CONTROL MANAGER:

**ING. PETER PODOR KEPES.**