



**TECNO CORPORATIVO INDUSTRIAL SA DE CV**  
 Lazaro Cardenas 30-A Int-1  
 San Jeronimo Tepetitlcalco  
 Tlalnepanitla, Estado de México C.p. 54090  
 Tels: +(5255) 85018226 al 28 Fax: 85018229  
 E-Mail: ventasbridamex@yahoo.com  
 www.tcifittings.com

**OCI WORLDWIDE**  
 ORGANISMO DE CERTIFICACIÓN INTERNACIONAL  
 Empresa Certificada Según:  
 NMX-CC-9001-IMNC-2008 / ISO 9001 : 2008



**FLANGES & FITTINGS**  
  
**BRIDAS Y CONEXIONES**

REPORTE DE PRUEBAS NUMERO:  
 TEST REPORT NUMBER:  
 CERTIFICADO SERIE / CERTIFICATE SERIES:  
**MTR-TCI-AV-00085**

**CERTIFICADO DE INSPECCION / INSPECTION CERTIFICATE / EN 10204: 2004 - 3.1.**

|  |                                   |                |                               |                                |                        |
|--|-----------------------------------|----------------|-------------------------------|--------------------------------|------------------------|
| <b>NOMBRE DEL CLIENTE / CLIENT NAME:</b> | <b>ORDEN DE COMPRA / P.O.NUM.</b> | <b>PED-ORP</b> | <b>REFERENCIA / REFERENCE</b> | <b>FECHA / DATE:</b>           | <b>Código Formato:</b> |
| PLESA ANAHUAC Y CIAS. S.A. DE C.V.       | 9441                              | 2292           |                               | Lunes, 06 de Diciembre de 2010 | KHTCI-1210             |

**TIPO DE MATERIAL / MATERIAL TYPE:**  
**CODIGOS y NORMAS APLICABLES / APLICABLE CODES & NORMS**

|   |  |
|---|--|
| ASTM A 105/A105N-10, ASME A/SA105 / NACE-MR-01-75 | ASME Boiler and Pressure Vessel SECC II . Code Part A, 2007, Addenda 2009                        |
| <b>PROCESOS / PROCESS</b>                         | <b>TRATAMIENTOS TERMICOS / HEAT TREATMENTS</b>   |
| FORGED / ROLLED 1150°C - 1200°C                   | NORMALIZED 900°C AND ALLOWED TO COOL IN STILL AIR / NORMALIZADO 900°C Y ENFRIADO AL AIRE CALMADO |

**DESCRIPCIÓN DEL ARTICULO / DESIGNATION OF ARTICLE:**

| PR/ITEM | CANTIDAD / QTY | INFORMACIÓN / INFORMATION |           |        |                 | MATERIA PRIMA / BASE MATERIAL |  |  |  | COLADA / HEAT CODE                                 |       |
|---------|----------------|---------------------------|-----------|--------|-----------------|-------------------------------|--|--|--|--|-------|
| 2       | 2              | 4"                        | ANCHORING | FLANGE | 300# SCH 0.237" | ANSI B16.5/ASME B16.5-2003    |  |  |  | MILL HEAT SUPPLIER // HEAT: CAXL (ORIGIN USA)      | CAXL  |
| 3       | 2              | 10"                       | ANCHORING | FLANGE | 300# SCH 0.250" | ANSI B16.5/ASME B16.5-2003    |  |  |  | MILL HEAT SUPPLIER // HEAT: 14379 (ORIGIN GERMANY) | 14379 |
| 4       | 2              | 16"                       | ANCHORING | FLANGE | 300# SCH 0.250" | ANSI B16.5/ASME B16.5-2003    |  |  |  | MILL HEAT SUPPLIER // HEAT: 18401 (ORIGIN GERMANY) | 18401 |

**% COMPOSICION QUIMICA / % CHEMICAL COMPOSITION:**

| %                       | C                | Mn          | Si          | P       | S       | Cr     | Ni     | Mo     | Cu     | SN    | AL | Nb | V      | Ti    | Co | As | Sb | H ppm | N | CEQ | Cr+Mo   | (1*)    |         |
|-------------------------|------------------|-------------|-------------|---------|---------|--------|--------|--------|--------|-------|----|----|--------|-------|----|----|----|-------|---|-----|---------|---------|---------|
| REQUERIDO/ Required MAX | ≤ 0.35           | 0.60 - 1.05 | 0.10 - 0.35 | ≤ 0.035 | ≤ 0.040 | ≤ 0.30 | ≤ 0.40 | ≤ 0.12 | ≤ 0.40 |       |    |    | ≤ 0.08 |       |    |    |    |       |   |     | ≤ 0.470 | ≤ 0.320 | ≤ 1.000 |
| PR/ITEM                 | COLADA/HEAT CODE |             |             |         |         |        |        |        |        |       |    |    |        |       |    |    |    |       |   |     |         |         |         |
| 2                       | CAXL             | 0.190       | 0.850       | 0.18    | 0.016   | 0.011  | 0.11   | 0.08   | 0.016  | 0.280 |    |    | 0.002  | 0.001 |    |    |    |       |   |     | 0.381   | 0.126   | 0.487   |
| 3                       | 14379            | 0.200       | 1.020       | 0.24    | 0.018   | 0.013  | 0.05   | 0.11   | 0.030  | 0.240 |    |    | 0.000  | 0.003 |    |    |    |       |   |     | 0.410   | 0.080   | 0.433   |
| 4                       | 18401            | 0.200       | 1.050       | 0.24    | 0.016   | 0.009  | 0.05   | 0.13   | 0.020  | 0.200 |    |    | 0.003  | 0.003 |    |    |    |       |   |     | 0.412   | 0.070   | 0.403   |

**PROPIEDADES MECANICAS / MECHANICAL PROPERTIES:**

| PRUEBAS DE TENSION / TENSILE TEST |  |           |             |   |   |              |                  | PRUEBAS DE IMPACTO / IMPACT TEST |             |           |                         |                    |                                       |                     |                      |
|-----------------------------------|--|-----------|-------------|---|---|--------------|------------------|----------------------------------|-------------|-----------|-------------------------|--------------------|---------------------------------------|---------------------|----------------------|
| No. PRUEBA / TEST No.             | Dimension del Especimen / Specimen dimension | Dirección | Temperatura | RESISTENCIA Tensile/ Strength (Mpa) / Ksi | LIMITE ELASTICO / Yield Point (Mpa) / Ksi | Elong.-A (%) | Red. of Area (%) | No. PRUEBA / Test No.            | Temperatura | Dirección | Resiliencia KV Energy J | Promedio / Average | Expansión Lateral / Lateral expansion | Fractura / Fracture | DUREZA / Hardness HB |
| REQUERIDO/ Required MAX           |  |           |             | ≥ (485) / 70                              | ≥ (250) / 36                              | ≥ 22         | ≥ 30             |                                  |             |           |                         |                    |                                       |                     | 137 - 187            |
| PR/ITEM                           | COLADA/HEAT CODE                             |           |             |   |   |              |                  |                                  |             |           |                         |                    |                                       |                     |                      |
| 2                                 | CAXL   | LONG.     |             | 517                                       | 314                                       | 35           | 52               |                                  |             |           |                         |                    |                                       |                     | 149                  |
| 3                                 | 14379  | LONG.     |             | 518                                       | 319                                       | 26           | 58               |                                  |             |           |                         |                    |                                       |                     | 145                  |
| 4                                 | 18401  | LONG.     |             | 524                                       | 328                                       | 26           | 56               |                                  |             |           |                         |                    |                                       |                     | 145                  |

**NOTA / NOTE:** 1)Cr+Ni+Mo+Cu+V / NO WELDING HAS BEEN PERFORMED // THIS PRODUCT IS FREE FROM MERCURY AND RADIOACTIVE // FOR EACH REDUCTION OF 0.01 % BELOW THE SPECIFIED CARBON MAXIMUM (0.35%) AND INCREASE OF 0.06 % MANGANESE ABOVE THE SPECIFIED MAXIMUM (1.05 %) WILL BE PERMITTED UP TO A MAXIMUM OF 1.35 %

**MARCADO / MARKING:** VX VX FLANGES & FITTINGS © QA TCI / Inspectores autorizados / Authorized Works Inspector: Ing. Jorge Diaz / Ing. Andres Lira / Ing. Rafael Eguia

Certificamos que todos los resultados de pruebas e información de proceso y procedimientos asentados en el presente, son correctos y verdaderos, concordando con los Registros de soporte técnico, Aseguramiento de calidad y Sistema de Gestión de la Calidad. / We here by certify that all test results and process information contained here in, are true and correct in accordance with in all the records of technical support, QA management and the company quality management sistem. ( EMPRESA CERTIFICADA SEGUN LA NORMA NMX-CC-9001-IMNC-2008/ ISO 9001:2008 para las actividades siguientes: FABRICANTE DE BRIDAS Y CONEXIONES / certified company for the following activities: MANUFACTURING PROCESS OF FLANGES AND FITTINGS.)

