

**CERTIFICADO DE CALIDAD  
INSPECTION CERTIFICATE**  
(DIN EN 10204:2004E - ISO 10474.3.1.B)

Tubos de Acero de México, S.A.

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Vendido a: **PLESA ANAHUAC Y CIA. S.A. DE C.V.** Pedido del Cliente No: **2830 -** Lista de Empaque: **9266** Fecha/Date: **11 de Junio de 2007**

Specificaciones y Grados / Standard or Specification and Steel Grade **ASME B 16.9 - 2003 and ASME B 16.28 - 1994** Dimensiones y tolerancias / Dimension and tolerances **Bocas / Ends**

Seamless Fittings according to ASTM A 234"W" WPB-97, A234"W" WPB-05a, NACE MR 01.75-2003 **ASME B 16.9 - 2003 and ASME B 16.28 - 1994** Conform to ASME II Eq. 2001 ASME SA-234"M", Grade WPB. **Biselado / Bevelled ends**

| DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION |                  | PRUEBAS MECANICAS / MECHANICAL TEST |                           | PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C |                                      |            |                    |                           |          |          |          |                         |
|--|------------------|-------------------------------------|---------------------------|---|--------------------------------------|------------|--------------------|---------------------------|----------|----------|----------|-------------------------|
| ART. ITEM                                      | COLADA HEAT CODE | CANTIDAD QUANTITY                   | DESCRIPCION / DESCRIPTION | ESF. CEDENCIA YIELD STRENGTH (Mpa)      | ESF. RUPATURA TENSILE STRENGTH (Mpa) | ELONG. %2" | DUREZA HARDNESS HB | DIMENSIONES SAMPLE DIM mm | 1 Joules | 2 Joules | 3 Joules | PROMEDIO AVERAGE Joules |
| 1  | T33435           | 4                                   | CODO 12 X 45° CED-40      | 326                                     | 492                                  | 42         | 86                 |                           |          |          |          |                         |

**ANALISIS QUIMICO / CHEMICAL ANALYSIS**

| PROCESO PROCESS | COLADA HEAT CODE | COLADA/HEAT M.P/MOTHER PIPE | %C.E. | %C    | %Mn   | %P    | %S    | %Si   | %Cr   | %Cu   | %Mo   | %Ni   | %V    | %Nb   |
|-----------------|------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HF              | T33435           | 33435                       | 0.310 | 0.180 | 0.670 | 0.010 | 0.002 | 0.270 | 0.050 | 0.057 | 0.034 | 0.030 | 0.000 | 0.000 |

**Notes:**

Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max. Hot formed fittings in a range from 620°C to 980°C, cooled in still air. Cold formed normalized at 940°C max.

Tempo de permanencia 10'. Holding time 10'.  
Inspeccion Dimensional. Satisfactoria. Visual dimensional check. Satisfactory.

HF FORMADO EN CALIENTE/NOT FORMED CF FORMADO EN FRIO/COLD FORMED

The Products described herein were produced in accordance with the above referenced specification and are identified with the "R" which is permanently marked on each fitting.

**Jefe de Calidad:**  
**Quality Manager:**



**ING. JOSE MARTINEZ MACIAS** CC-008

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Matena Prima (Tuberia Sin Costura) conforme ASTM A106 Grado B con N° We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or supplier Raw material (Seamless Pipe) certs conform to ASTM A106 Grade B N° 7017981

Este material cumple con los requerimientos especificados en la orden.  
The material of this certificate heat number mentioned above is in compliance with the requirements specified in the order"