

**CERTIFICADO DE CALIDAD  
INSPECTION CERTIFICATE**  
(DIN EN 10204:2004E - ISO 10474 3.1.B)

Tubos de Acero de México, S.A.  
Carr. Mty-Laredo Km 24.2  
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|   |                                   |  |      |                          |      |              |                     |
|---|-----------------------------------|--|------|--------------------------|------|--------------|---------------------|
| Vendido a:  | PLESA ANAHUAC Y CIA. S.A. DE C.V. | Pedido del Cliente No:                               | 3194 | Lista de Empaque:        | 9362 | Fecha/Date:  | 10 de Julio de 2007 |
| Sold to:  |                                   | Customers Order No:                                  |      | Packing List:            |      |              |                     |
| Especificaciones y Grados / Standard or Specification and Steel Grade             |                                   | Dimensiones y tolerancias / Dimension and tolerances |      | Factura/Invoice:         |      | Bocas / Ends |                     |
| Seamless Fittings according to ASTM A 234"WPB-97 A234"WPB-05a, NACE MR 01.75-2003 |                                   | ASME B 16.9 - 2003 and ASME B 16.28 - 1994           |      | Biselado / Bevelled ends |      |              |                     |
| Conform to ASME II Ed. 2001 ASME SA-234"WP, Grade WPB.                            |                                   |  |      |                          |      |              |                     |

| ART. ITEM | COLADA HEAT CODE | CANTIDAD QUANTITY | DESCRIPCION / DESCRIPTION   | PRUEBAS MECANICAS / MECHANICAL TEST |                                     |            | PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C |          |          |                         |
|-----------|------------------|-------------------|-----------------------------|-------------------------------------|-------------------------------------|------------|---|----------|----------|-------------------------|
|           |                  |                   |                             | ESF. CEDENCIA YIELD STRENGTH (Mpa)  | ESF. RUPTURA TENSILE STRENGTH (Mpa) | ELONG. %2" | 1 Joules                                | 2 Joules | 3 Joules | PROMEDIO AVERAGE Joules |
| 1         | T33356           | 100               | CODO 6 X 90° R. I. CED-STD. | 288                                 | 468                                 | 34         |   |          |          |                         |
| 2         | T33433           | 16                | TEE 8 CED-STD               | 347                                 | 500                                 | 34         |   |          |          |                         |
| 3         | T33356           | 3                 | TEE 4 CED-STD               | 338                                 | 502                                 | 36         |   |          |          |                         |
| 4         | T34179           | 52                | TEE 4 CED-STD               | 356                                 | 478                                 | 37         |   |          |          |                         |
| 5         | T29388           | 16                | CODO 6 X 45° CED-STD        | 326                                 | 478                                 | 40         |   |          |          |                         |
| 6         | T29389           | 3                 | CODO 6 X 45° CED-STD        | 328                                 | 468                                 | 35         |   |          |          |                         |
| 7         | T29862           | 25                | CODO 6 X 45° CED-STD        | 332                                 | 480                                 | 36         |   |          |          |                         |
| 8         | T33357           | 6                 | CODO 6 X 45° CED-STD        | 386                                 | 505                                 | 31         |   |          |          |                         |
| 9         | S48307           | 106               | CODO 3 X 90° R. I. CED-XS   | 294                                 | 467                                 | 38         |   |          |          |                         |
| 10        | S79195           | 37                | CODO 4 X 45° CED-STD        | 258                                 | 424                                 | 39         |   |          |          |                         |
| 11        | S47792           | 3                 | CODO 4 X 45° CED-STD        | 332                                 | 484                                 | 29         |   |          |          |                         |

**ANALISIS QUIMICO / CHEMICAL ANALYSIS**

| PROCESO PROCESS | COLADA HEAT CODE | COLADAH/HEAT M.P/MOTHER PIPE | %C.E. | %C    | %Mn   | %P    | %S    | %Si   | %Cr   | %Cu   | %Mo   | %Ni   | %V    | %Nb   |
|-----------------|------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HF              | T33356           | 33356                        | 0.320 | 0.180 | 0.680 | 0.010 | 0.001 | 0.290 | 0.070 | 0.066 | 0.028 | 0.030 | 0.000 | 0.000 |
| HF              | T33433           | 33433                        | 0.310 | 0.170 | 0.690 | 0.011 | 0.003 | 0.280 | 0.050 | 0.053 | 0.026 | 0.030 | 0.000 | 0.000 |
| HF              | T33356           | 33356                        | 0.320 | 0.180 | 0.670 | 0.009 | 0.002 | 0.290 | 0.070 | 0.058 | 0.028 | 0.030 | 0.000 | 0.000 |
| HF              | T34179           | 34179                        | 0.310 | 0.180 | 0.670 | 0.009 | 0.001 | 0.270 | 0.050 | 0.072 | 0.027 | 0.030 | 0.000 | 0.000 |
| HF              | T29388           | 29388                        | 0.300 | 0.170 | 0.670 | 0.010 | 0.001 | 0.270 | 0.040 | 0.060 | 0.026 | 0.030 | 0.000 | 0.000 |
| HF              | T29389           | 29389                        | 0.290 | 0.160 | 0.690 | 0.009 | 0.002 | 0.280 | 0.030 | 0.057 | 0.023 | 0.030 | 0.000 | 0.000 |
| HF              | T29862           | 29862                        | 0.310 | 0.170 | 0.670 | 0.007 | 0.002 | 0.280 | 0.070 | 0.074 | 0.034 | 0.040 | 0.000 | 0.000 |
| HF              | T33357           | 33357                        | 0.310 | 0.180 | 0.670 | 0.010 | 0.002 | 0.270 | 0.050 | 0.062 | 0.019 | 0.030 | 0.000 | 0.000 |
| HF              | S48307           | 48307                        | 0.317 | 0.180 | 0.720 | 0.010 | 0.001 | 0.290 | 0.040 | 0.029 | 0.020 | 0.036 | 0.001 | 0.001 |
| HF              | S79195           | 79195                        | 0.320 | 0.190 | 0.710 | 0.009 | 0.003 | 0.280 | 0.030 | 0.033 | 0.010 | 0.019 | 0.001 | 0.001 |
| HF              | S47792           | 47792                        | 0.323 | 0.180 | 0.730 | 0.014 | 0.001 | 0.280 | 0.050 | 0.029 | 0.040 | 0.018 | 0.001 | 0.001 |

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 Materia 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°.

7016016 7028488 7014192 7019603 6023117 6023332  
6040533 7016016 344862 321654 338647

\*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\*.

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.

Notas:  
Formado en caliente a 620°C-900°C, enfriado al aire; Formado en frio normalizado a 940°C max.  
Tiempo de permanencia 10'.  
Inspeccion Dimensional Satisfactoria.  
HF: FORMADO EN CALIENTE/HOT FORMED

Notas:  
Hot formed fittings in a range from 620°C to 900°C, cooled in still air.  
Cold formed normalized at 940°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory  
CF: FORMADO EN FRIOCALD FORMED

Jefe de Calidad:  
Quality Manager:  
ING. JOSE MARTINEZ MACIAS  
CC-008