

**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.<br>Sold to: PLESA ANAHUAC Y CIA. S.A. DE C.V.<br>Especificaciones y Grados / Standard or Specification and Steel Grade<br>Seamless Fittings according to ASTM A 234 "M" WPB-97, A234 "M" WPB-05a, NACE MR 01.75-2003<br>Conform to ASME II Ed. 2001 ASME SA-234 "M", Grade WPB. | Pedido del Cliente No: 2787-2830<br>Customers Order No: Dimensiones y tolerancias / Dimension and tolerances | Numero: 17836<br>Number: 17836<br>Pagina/Page: 1 DE 1      | Fecha/Date: 30 de Abril de 2007 |
| ASME B 16.9 - 2003 and ASME B 16.28 - 1994                                                                                                                                                                                                                                                                                   | Lista de Empaque: 9 1 3 4<br>Packing List:                                                                   | Factural/Invoice: Bocas / Ends<br>Biselado / Bevelled ends |                                 |

| 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" | DUREZA HARDNESS HB | DIMENSIONES SAMPLE DIM mm               | 1 Joules | 2 Joules | 3 Joules |
| 1         | S49639           | 50                | CODO 6 X 45° CED-STD             | 316                                 | 479                                 | 32         | 88                 |                                         |          |          |          |
| 2         | S33538           | 5                 | CODO 4 X 90° R.I. CED-XS         | 300                                 | 480                                 | 51         | 116                |                                         |          |          |          |
| 3         | S20021           | 64                | CODO 4 X 90° R.I. CED-XS         | 316                                 | 487                                 | 36         | 111                |                                         |          |          |          |
| 4         | S21172           | 25                | CODO 4 X 90° R.I. CED-XS         | 278                                 | 467                                 | 39         | 105                |                                         |          |          |          |
| 5         | S48650           | 6                 | CODO 4 X 90° R.I. CED-XS         | 332                                 | 478                                 | 36         | 107                |                                         |          |          |          |
| 6         | S30680           | 50                | RED. CONC. 2 1/2 X 2 CED-STD     | 332                                 | 472                                 | 36         | 124                |                                         |          |          |          |
| 7         | T29530           | 10                | RED. CONC. 14 X 12 CED-STD       | 275                                 | 462                                 | 36         | 133                |                                         |          |          |          |
| 8         | T28420           | 2                 | CODO 12 X 45° SHC-80             | 284                                 | 478                                 | 46         | 117                |                                         |          |          |          |
| 9         | T28691           | 3                 | CODO 12 X 45° SHC-80             | 295                                 | 476                                 | 49         | 116                |                                         |          |          |          |
| 10        | T32956           | 10                | RED. CONC. 8 X 5 CED-STD         | 302                                 | 484                                 | 34         | 100                |                                         |          |          |          |
| 11        | S30680           | 50                | RED. CONC. 2 1/2 X 1 1/2 CED-STD | 332                                 | 472                                 | 36         | 124                |                                         |          |          |          |

**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              | S49639           | 49639                        | 0.318 | 0.180 | 0.750 | 0.010 | 0.020 | 0.300 | 0.030 | 0.055 | 0.010 | 0.017 | 0.001 | 0.000 |
| HF              | S33538           | 33538                        | 0.305 | 0.170 | 0.720 | 0.012 | 0.002 | 0.280 | 0.040 | 0.046 | 0.010 | 0.021 | 0.001 | 0.001 |
| HF              | S20021           | 20021                        | 0.344 | 0.200 | 0.790 | 0.011 | 0.001 | 0.310 | 0.040 | 0.024 | 0.010 | 0.014 | 0.001 | 0.002 |
| HF              | S21172           | 21172                        | 0.319 | 0.180 | 0.780 | 0.012 | 0.001 | 0.290 | 0.020 | 0.021 | 0.010 | 0.016 | 0.001 | 0.002 |
| HF              | S48650           | 48650                        | 0.332 | 0.190 | 0.750 | 0.010 | 0.001 | 0.300 | 0.050 | 0.040 | 0.010 | 0.028 | 0.001 | 0.001 |
| CF              | S30680           | 30680                        | 0.329 | 0.190 | 0.730 | 0.014 | 0.002 | 0.270 | 0.040 | 0.054 | 0.020 | 0.028 | 0.001 | 0.001 |
| CF              | T29530           | 29530                        | 0.310 | 0.180 | 0.650 | 0.008 | 0.004 | 0.270 | 0.040 | 0.070 | 0.026 | 0.040 | 0.000 | 0.000 |
| HF              | T28420           | 28420                        | 0.310 | 0.170 | 0.680 | 0.009 | 0.001 | 0.290 | 0.060 | 0.089 | 0.037 | 0.040 | 0.000 | 0.000 |
| HF              | T28691           | 28691                        | 0.310 | 0.170 | 0.680 | 0.010 | 0.002 | 0.290 | 0.080 | 0.085 | 0.021 | 0.030 | 0.000 | 0.000 |
| CF              | T32956           | 32956                        | 0.300 | 0.170 | 0.660 | 0.009 | 0.003 | 0.280 | 0.060 | 0.055 | 0.019 | 0.030 | 0.000 | 0.000 |
| CF              | S30680           | 30680                        | 0.329 | 0.190 | 0.730 | 0.014 | 0.002 | 0.270 | 0.040 | 0.054 | 0.020 | 0.028 | 0.001 | 0.001 |

Notas:  
Formado en caliente a 620°C-980°C, enfriado al aire; Formado en frío normalizado a 940°C max.  
Tempo de permanencia 10'.  
Inspeccion Dimensional: Satisfactoria.

Notes:  
Hot formed fittings in a range from 620°C to 980°C, cooled in still air.  
Cold formed normalized at 940°C max.  
Holding time 10'.  
Visual dimensional check: Satisfactory

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) certis conform to ASTM A106 Grade B N°. 353469 218583 357518 369604 346340 190507 6024905 6012832 6017950 7010312 190507

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.

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