

**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: PLESÀ ANAHUAC Y CIA. S.A. DE C.V.      Pedido del Cliente No: 4897 - 4884 -  
Sold to:      Customers Order No:      Dimensiones y tolerancias / Dimension and tolerances

Especificaciones y Grados / Standard or Specification and Steel Grade      ASME B 16.9 - 2003 and ASME B 16.28 - 1994

Seamless Fittings according to ASTM A 234 "W" WPB-97, A234 "W" WPB-08a, NACE MR 01.75-2003      Lista de Empaque: 1 0834      Fecha/Date: 15 de Septiembre de 2008  
Conform to ASME II Ed. 2001 ASME SA-234 "W" Grade WPB, NACE MR0103-2003      Packing List:      Factura/Invoice: Bocas / Ends  
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 HBW | DIMENSIONES SAMPLE DIM mm               | 1 Joules | 2 Joules | 3 Joules |
| 1         | T37795           | 11                | TEE 6 CED-XS              | 266                                 | 481                                 | 43         | 107                 |   |          |          |          |
| 2         | T39958           | 12                | TEE 6 CED-XS              | 297                                 | 484                                 | 33         | 120                 |   |          |          |          |
| 3         | S48250           | 4                 | CODO 5 X 90° R. C. CED-XS | 280                                 | 461                                 | 36         | 130                 |   |          |          |          |
| 4         | S22137           | 1                 | CODO 5 X 90° R. C. CED-XS | 316                                 | 505                                 | 32         | 141                 |   |          |          |          |

**ANALISIS QUIMICO / CHEMICAL ANALYSIS**

| PROCESO PROCESS | COLADA HEAT CODE | COLADA/MOTHER PIPE | %C.E. | %C    | %Mn   | %P    | %S    | %Si   | %Cr   | %Cu   | %Mo   | %Ni   | %V    | %Nb   |
|-----------------|------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| HF              | T37795           | 37795              | 0.310 | 0.180 | 0.670 | 0.010 | 0.001 | 0.270 | 0.050 | 0.053 | 0.012 | 0.040 | 0.000 | 0.000 |
| HF              | T39958           | 39958              | 0.300 | 0.170 | 0.670 | 0.010 | 0.002 | 0.260 | 0.050 | 0.058 | 0.007 | 0.030 | 0.000 | 0.000 |
| HF              | S48250           | 48250              | 0.320 | 0.190 | 0.720 | 0.008 | 0.002 | 0.280 | 0.020 | 0.022 | 0.010 | 0.014 | 0.001 | 0.001 |
| HF              | S22137           | 22137              | 0.386 | 0.166 | 0.819 | 0.000 | 0.007 | 0.001 | 0.299 | 0.046 | 0.064 | 0.040 | 0.025 | 0.001 |

**Notes:**  
Formado en caliente a 620°C-890°C, enfriado al aire; Formado en frío normalizado a 940°C max.  
Hot formed fittings in a range from 620°C to 890°C, cooled in still air.  
Cold formed normalized at 940°C max.  
Tiempo de permanencia 10'.  
Holding time 10'.  
Inspección Dimensional: Satisfactoria.  
Visual dimensional check: Satisfactory.  
CF: FORMADO EN FRIO/COLD FORMED

**Notes:**  
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. The values of hardness for fittings NPS 2 1/2" and smaller ones obtain from the conversion of hardness Rockwell B to hardness Brinell HBW by means of table WILSON DESK CHART 60.  
Los valores de dureza para conexiones de NPS de 2 1/2" y menores, se obtienen de la conversión de dureza Rockwell B a dureza Brinell HBW mediante la tabla WILSON DESK CHART 60.

ING. WALDO GALLEGOS GALVAN

Quality Manager Jefe de Calidad:

CC-008