

CLIENTE / Customer / Client

**TUBOS CONEX. Y TANQUES, S.A. C.V.**  
**AV. VALLE DE LAS ALAMEDAS, 66-C**  
**COL. SAN FRANCISCO CHILPAN**  
**54940 TULITLAN-EDO. DE MEXICO**

**CERTIFICADO DE INSPECCION**  
**Works Certificate - Certificat d'Usine**

DIN 50049 / 3.1.B.  
 EN 10204 / 3.1.B.

FECHA: 08/07/2004  
 Date: 08/07/2004

N.º: 95016  
 No.-N.º: 95016

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N.º: 922164



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PRODUCTO **BRIDAS**  
 Article - Product  
 NORMAS APLICABLES **ASME B16.5-96**  
 Requirements - Normes applicables

SU PEDIDO N.º  
 Your Order No. **7988 (02.03.04)**  
 Votre Cde. N.º

DE of - de **03/03/2004**

MATERIAL CORRESPONDIENTE **ASTMA105N-02**  
 Material Correspondent - Qualité **ASME SA105N**

Certified acc. PED 97/23/EC  
 by TÜV Rheinland  
 N.º 01 202 EQ 02 7443

MODO DE FUSION (\*) **NACE MR-01-75/03**  
 Steel making - Elaboration de l'acier

E = Elec. Y = Oxígeno básico

MARCA DEL FABRICANTE  
 Mark of factory  
 Marque du fabricant  
 DEPARTAMENTO  
 Section  
 Departement



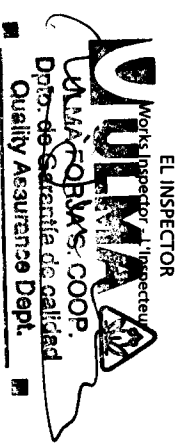
40716

| PARTIDA<br>Item<br>Poste | CANTIDAD<br>Quantity<br>Quantité | DESCRIPCION<br>Description<br>Description | OBSERVACIONES<br>Remarks<br>Observations (*) | COLADA N.º<br>Heat No<br>N.º Couille | RESISTENCIA<br>T. Strength<br>Resist Rupt<br>N/mm2 | LIMITE ELAST.<br>Yield Point<br>Limite élastique<br>N/mm2 | ALARGAM.<br>Elongation<br>Allongement<br>Lc: 4 d<br>% | ESTRICCION<br>Reduction A<br>Striction<br>% | RESILIENCIA<br>Impact energy<br>Resilience<br>Joules | PROBETA test bar |          |
|--------------------------|----------------------------------|---|--|--------------------------------------|--|---|---|---|--|------------------|----------|
|                          |                                  |   |  |                                      |  |   |   |   |  | MEIDA<br>AVERAGE | °C       |
| 3                        | 72                               | BLIND 8 150LB RF A105N                    | NE   | 204A4                                | 515  | 303   | 31.50   | 63.00                                       |  | MEIDA            | DUREZA   |
| 4                        | 84                               | BLIND 10 150LB RF A105N                   | NE   | 228A4                                | 502  | 304   | 31.00   | 64.60                                       |  | AVERAGE          | Hardness |
| 5                        | 30                               | BLIND 12 150LB RF A105N                   | NE   | 218A4                                | 509  | 304   | 31.60   | 63.00                                       |  |                  | Durée    |
| 7                        | 16                               | BLIND 16 150LB RF A105N                   | NE   | 184A4                                | 539  | 284   | 27.20   | 40.10                                       |  |                  |          |
| 13                       | 120                              | SO 12 150LB RF A105N                      | NE   | 176A4                                | 503  | 301   | 30.80   | 63.20                                       |  |                  |          |
| 20                       | 630                              | WN 6 150LB S40 RF A105N                   | NE   | 178A4                                | 514  | 322   | 32.00   | 65.10                                       |  |                  |          |
| 20                       | 105                              | WN 6 150LB S40 RF A105N                   | NE   | 205A4                                | 518  | 325   | 32.00   | 64.70                                       |  |                  |          |
| 24                       | 10                               | WN 16 150LB S/STD RF A105N                | NE   | 198A4                                | 526  | 331   | 32.00   | 66.00                                       |  |                  |          |

**COMPOSICION QUIMICA - STEEL MAKER'S LADLE ANALYSIS - ANALYSE CHIMIQUE**

| COLADA<br>Heat<br>Couille<br>No | C %   | Si %  | Mn %  | P %   | S %   | Cr %  | Ni %  | Mo %  | Nb %  | V %   | Cu %  | CEQ % |
|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 176A4                           | 0.190 | 0.210 | 0.820 | 0.013 | 0.024 | 0.050 | 0.100 | 0.020 | 0.001 | 0.001 | 0.290 | 0.367 |
| 178A4                           | 0.180 | 0.230 | 0.800 | 0.017 | 0.002 | 0.100 | 0.150 | 0.040 | 0.001 | 0.001 | 0.400 | 0.378 |
| 184A4                           | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 198A4                           | 0.180 | 0.290 | 0.850 | 0.021 | 0.005 | 0.100 | 0.160 | 0.040 | 0.001 | 0.002 | 0.400 | 0.387 |
| 204A4                           | 0.190 | 0.160 | 0.990 | 0.012 | 0.014 | 0.060 | 0.090 | 0.060 | 0.007 | 0.002 | 0.370 | 0.410 |
| 205A4                           | 0.180 | 0.280 | 0.820 | 0.019 | 0.002 | 0.180 | 0.190 | 0.060 | 0.007 | 0.002 | 0.370 | 0.402 |
| 218A4                           | 0.180 | 0.170 | 1.010 | 0.006 | 0.018 | 0.030 | 0.080 | 0.016 | 0.000 | 0.002 | 0.130 | 0.372 |
| 228A4                           | 0.200 | 0.200 | 0.820 | 0.012 | 0.028 | 0.080 | 0.140 | 0.030 | 0.003 | 0.001 | 0.290 | 0.388 |

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et états de surface sont satisfaisants
- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectées



(\*) OBSERVACIONES: N\_NORMALIZADO A 900 C Y ENFRIADO EN AIRE EN CALMA  
 Remarks  
 Observations