CLIENTE / Customer / Client

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AV. VALLE DE LAS ALAMEDAS, 66-O
COL. SAN FRANCISCO CHILPAN
54940 TULTITLAN-EDO. DE MEXICO

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

DIN 50049 / 3.1.B
EN 10204 / 3.1.B
ISO 10474 / 3.1.B

FECHA: Date 12/07/2005 | N.º No. 101898 | HOJA: Page: 2

N.º: 922164

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47228

PRODUCTO / Article - Produit: ACCESORIOS

SU PEDIDO N.º / Your Order No. / Votre Cde. N.º: 300000024-JULIO 2005

DE / of. - de: 29/04/2005

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

NORMAS APLICABLES / Requirements - Normes Applicables: ASME B16.11-01

MARCA DEL FABRICANTE / Mark of factory / Marque du fabricant

MATERIAL CORRESPONDIENTE / Material Correspondent - Qualité: ASTMA105N-03, ASME SA105N

MODO DE FUSION (*) / Steel Making - Elaboration de l'acier: NACE MR-01-75/03
E = Elec. Y = Oxígeno básico

DEPARTAMENTO / Section / Department: GARANTÍA CALIDAD

| PARTIDA Item Poste | CANTIDAD Quantity Quantité | DESCRIPCION Description Description | OBSERVACIONES Remarks Observations (*) | COLADA N.º Heat No N.ºCoulée | RESISTENCIA T.Strength Resist Rupt N/mm2 | LIMITE ELAST Yield Point Limite Elast. N/mm2 | ALARGAM Elongation Allongement Lo: 4 d % | ESTRICCION Reduction A Striction % | RESILENCIA Impact test Resilience Joules | PROBETA - SPECIMEN MEDIA Average Moyenne °C | DUREZA Hardness Dureté HB |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 90 | CODO45 3/4 3000LB NPT A105N | NE | 61RZ | 518 | 339 | 31,90 | 62,00 | | | 150 |
| 5 | 150 | CODO90 1 3000LB NPT A105N | NE | 210A5 | 518 | 316 | 31,70 | 65,00 | | | 150 |
| 8 | 150 | CODO90 2 3000LB SW A105N | NE | 193A5 | 514 | 317 | 32,70 | 66,20 | | | 150 |
| 9 | 160 | TE 1 3000LB SW A105N | NE | 315A4 | 512 | 302 | 32,60 | 65,00 | | | 150 |
| 10 | 300 | T.UNION 1 3000LB NPT A105N | NE | 226A4 | 528 | 337 | 31,00 | 62,30 | | | 152 |
| 11 | 60 | T.UNION 1.1/4 3000LB NPT A105N - Hembra | NE | 319A4 | 519 | 306 | 31,00 | 64,70 | | | 151 |
| 11 | 60 | T.UNION 1.1/4 3000LB NPT A105N - Tuerca | NE | 147AZ | 520 | 316 | 31,40 | 60,70 | | | 150 |
| 11 | 60 | T.UNION 1.1/4 3000LB NPT A105N - Macho | NE | 109A4 | 519 | 325 | 32,00 | 66,30 | | | 152 |
| 12 | 320 | T.UNION 1/2 3000LB NPT A105N | NE | 114A3 | 512 | 327 | 30,60 | 60,20 | | | 152 |

## COMPOSICION QUIMICA - STEEL MARKER'S - ANALYSE CHIMIQUE

| COLADA N.º Heat No N.ºCoulée | C % | Si % | Mn % | P % | S % | Cr % | Ni % | Mo % | Nb % | V % | Cu % | CEQ % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 109A4 | 0.210 | 0.280 | 0.820 | 0.024 | 0.030 | 0.140 | 0.110 | 0.010 | 0,000 | 0.002 | 0.160 | 0.395 |
| 114A3 | 0.180 | 0.260 | 0.990 | 0.009 | 0.031 | 0.110 | 0.120 | 0.030 | 0,001 | 0.005 | 0.150 | 0.392 |
| 147AZ | 0.180 | 0.260 | 1.020 | 0.014 | 0.030 | 0.160 | 0.150 | 0.030 | 0,002 | 0.004 | 0.160 | 0.409 |
| 193A5 | 0.180 | 0.250 | 0.820 | 0.020 | 0.002 | 0.150 | 0.090 | 0.030 | 0,007 | 0.002 | 0.250 | 0.376 |
| 210A5 | 0.190 | 0.170 | 0.820 | 0.011 | 0.001 | 0.090 | 0.120 | 0.030 | 0,007 | 0.001 | 0.380 | 0.384 |
| 226A4 | 0.200 | 0.280 | 1.000 | 0.005 | 0.027 | 0.120 | 0.150 | 0.030 | 0,001 | 0.004 | 0.150 | 0.417 |
| 315A4 | 0.190 | 0.170 | 1.050 | 0.009 | 0.020 | 0.030 | 0.080 | 0.010 | 0,000 | 0.001 | 0.190 | 0.391 |
| 319A4 | 0.190 | 0.180 | 1.040 | 0.007 | 0.018 | 0.030 | 0.080 | 0.010 | 0,000 | 0.001 | 0.170 | 0.388 |
| 61RZ | 0.160 | 0.260 | 1.260 | 0.018 | 0.001 | 0.090 | 0.120 | 0.030 | 0,005 | 0.003 | 0.240 | 0.419 |

(*) OBSERVACIONES / Remarks / Observations: N_NORMALIZADO A 900 C Y ENFRIADO EN AIRE EN CALMA

- Las dimensiones y la condición superficial se hallaron satisfactorias
- Dimension and surface condition were found acceptable
- Les dimensions et etats de surface sont satisfaisants

- Los materiales citados cumplen las normas aplicables
- Manufacturing requirements are satisfied
- Les normes applicables sont respectees

EL INSPECTOR
Works Inspector - L'Inspecteur

ULMA