



# TUBOS REUNIDOS GROUP, S.L.U

Barrio Sagarribai, 2 - 01470 AMURRIO (Spain)

Mill: TUBOS  
Previously known as Tubos Reunidos Industrial

EN 10204:2004 / 3.1

QUALITY  
MANAGEMENT  
SYSTEM  
certified by  
LRQA

## CERTIFICADO DE CALIDAD MILL TEST CERTIFICATE

THE BILLETS AND THE MATERIAL COVERED BY THIS CERTIFICATE ARE MANUFACTURED AT OUR STEEL PLANT IN AMURRIO, SPAIN.

Nº 0000358723/1 Rev. 000

EXCLUSION REQUEST NUMBER: 265997

Product description:  
B/C/1/6 Seamless carbon steel pipe, hot rolled, according to Product Specifications information provided. Possible product quota category:  
99038085 Pressure tubing and other products  
#HTSUS: 7304390004

|   |  |   |  |
|---|--|---|--|
| CL: _____<br>CU:                            |  | PEDIDO / PARTIDA:<br>P.ORDER / ITEM         | 306875<br>7.   |
| PRODUCTO:<br>ARTICLE                        | TUBERÍA SIN SOLDADURA LAMINADA EN CALIENTE<br>HOT FINISHED SEAMLESS TUBES                    | REF. FABRICA:<br>WORK ORDER                 | 300021767<br>000070  |
| EXTREMOS:<br>ENDS                           | LISOS A ESCUADRA<br>SQUARE CUT PLAIN END   | PROTECCIÓN SUPERF:<br>EXT. COATING          | LACA EXTERIOR<br>EXTERNALLY DRY LACQUERED  |
| NORMA / GRADO:<br>APL.STANDARD AND<br>GRADE | ASTM A106/A106M-19A / ASME II<br>SA-106/SA-106M 2021<br>B/C                                  | PROCESO FUSION:<br>MELTING PROCESS          | HORNO ELECTRICO<br>ACERO TOTALMENTE CALMADO<br>ELECTRIC FURNACE // FULLY KILLED<br>FINE GRAIN PRACTICE |
| ESPEC.<br>ADICIONALES:<br>ADDITIONAL SPECS. | NACE MR0175/ISO 15156 ED. 2015<br>NACE MR0103/ISO 17945 ED. 2015                             | FAB. DE PALANQUILLA:<br>BILLETS MANUFACTURE | COLADA CONTINUA<br>CONTINUOUS CASTING  |
| DIMENSIONES:<br>DIMENSIONS                  | 1.1/2" NB X 0.200" X<br>20-22 FT.  | DIMENSIONAL STD:                            | ANSI/ASME B36.10M  |
| MARCAS:<br>MARKING                          | ESTAMPADO:<br>DIE STAMPING<br><br>PINTADO:<br>STENCILLED<br><br>CODIGO COLOR:<br>COLOUR CODE |   |  |

EST. SUMINISTRO: BRUTO LAMINACIÓN ENFRIADO AL AIRE / AS ROLLED COOLED IN STILL AIR  
SUPPLYING COND

|                        |                           | DESCRIPCION SUMINISTRO / DESCRIPTION OF DELIVERY |                    |                      |                           |                    |
|------------------------|---------------------------|--|--------------------|----------------------|---------------------------|--------------------|
| ITEM FAB.<br>T.R. ITEM | ITEM CLI.<br>CLIENTS ITEM | LONG.INDIV (F)<br>INDIVIDUAL LENGTH              | COLADA<br>CAST NR. | Nº TUBOS<br>QUANTITY | LONG. TOTAL (F)<br>LENGTH | PESO(KG)<br>WEIGHT |
| 000070                 | 7.                        | 20,000 - 22,000                                  | 128235             | 1.001                | 20.520,635                | 34.036             |
| 000070                 | 7.                        | 20,000 - 22,000                                  | 128271             | 2.382                | 48.826,640                | 81.046             |
| 000070                 | 7.                        | 20,000 - 22,000                                  | 128272             | 501                  | 10.269,618                | 17.041             |
| TOTAL                  |                           |  |                    | 3.884                | 79.616,893                | 132.123            |

TUBOS REUNIDOS GROUP (MILL: TUBOS) GARANTIZA QUE TODOS LOS TUBOS CUBIERTOS POR ESTE CERTIFICADO CUMPLEN LOS REQUISITOS DEL PEDIDO Y CON LAS ESPECIFICACIONES ARRIBA MENCIONADAS.  
TUBOS REUNIDOS GROUP (MILL: TUBOS) CERTIFY THAT ALL THE TUBES COVERED BY THIS CERTIFICATE COMPLY WITH ORDER REQUIREMENTS AND ABOVE MENTIONED SPECIFICATIONS.

AMURRIO 09.05.2022

CONTROL DE CALIDAD DE TUBOS REUNIDOS  
GROUP  
Mill: TUBOS  
TUBOS REUNIDOS GROUP (QUALITY CONTROL)  
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Lista de Bultos / Packing 797742  
List

### ENSAYOS NO DESTRUCTIVOS / NON DESTRUCTIVE TESTS

| ENSAYO / TEST                                       | %CONTROL / TEST RATE(%) | REQUISITOS / REQUIREMENTS | RESULTADO / RESULT |
|---|-------------------------|---------------------------|--------------------|
| VISUAL Y DIMENSIONAL/<br>VISUAL & DIMENSIONAL INSP. | 100%                    |                           | O.K.               |
| P.HIDROSTATICA/<br>HYDROTEST                        | 100%                    | 2.500,0 PSI 5 SEC.        | O.K.               |

### ENSAYOS TECNOLÓGICOS Y METALÚRGICOS / TECHNOLOGICAL AND METALLURGICAL TEST

DOBLADO / BENDING AC/ A/SA 106 -OK

#### ANALISIS DE COLADA / CAST ANALYSYS

|        | C      | Mn   | Si   | P     | S      | Cr    | Ni    | Mo     | Cu     | V      | Nb     | C.E. |
|--------|--------|------|------|-------|--------|-------|-------|--------|--------|--------|--------|------|
| MIN.   |        | 0,29 | 0,10 |       |        |       |       |        |        |        |        |      |
| MAX.   | 0,30   | 1,06 |      | 0,015 | 0,0100 | 0,400 | 0,400 | 0,1500 | 0,4000 | 0,0800 |        |      |
| 128235 | 0,1900 | 0,80 | 0,21 | 0,011 | 0,0015 | 0,040 | 0,070 | 0,0300 | 0,1600 | 0,0254 | 0,0022 | 0,36 |
| 128271 | 0,1960 | 0,80 | 0,21 | 0,011 | 0,0043 | 0,090 | 0,080 | 0,0400 | 0,2000 | 0,0230 | 0,0050 | 0,38 |
| 128272 | 0,1970 | 0,79 | 0,19 | 0,010 | 0,0044 | 0,080 | 0,090 | 0,0200 | 0,2000 | 0,0270 | 0,0025 | 0,37 |

#### ANALISIS DE PRODUCTO / PRODUCT ANALYSIS

|        | C      | Mn   | Si   | P     | S      | Cr    | Ni    | Mo     | Cu     | V      | Nb     | C.E. |
|--------|--------|------|------|-------|--------|-------|-------|--------|--------|--------|--------|------|
| MIN.   |        | 0,29 | 0,10 |       |        |       |       |        |        |        |        |      |
| MAX.   | 0,30   | 1,06 |      | 0,015 | 0,0100 | 0,400 | 0,400 | 0,1500 | 0,4000 | 0,0800 |        |      |
| 128235 | 0,1880 | 0,79 | 0,21 | 0,011 | 0,0013 | 0,040 | 0,070 | 0,0200 | 0,1600 | 0,0220 | 0,0010 | 0,35 |
| 128235 | 0,1880 | 0,79 | 0,21 | 0,011 | 0,0016 | 0,040 | 0,070 | 0,0200 | 0,1600 | 0,0220 | 0,0010 | 0,35 |
| 128271 | 0,1940 | 0,80 | 0,22 | 0,012 | 0,0035 | 0,090 | 0,080 | 0,0300 | 0,2100 | 0,0210 | 0,0010 | 0,37 |
| 128271 | 0,1940 | 0,80 | 0,22 | 0,012 | 0,0034 | 0,090 | 0,080 | 0,0300 | 0,2100 | 0,0210 | 0,0010 | 0,37 |
| 128272 | 0,1930 | 0,81 | 0,22 | 0,012 | 0,0036 | 0,090 | 0,080 | 0,0300 | 0,2100 | 0,0210 | 0,0010 | 0,38 |
| 128272 | 0,1930 | 0,81 | 0,22 | 0,012 | 0,0037 | 0,090 | 0,080 | 0,0300 | 0,2100 | 0,0210 | 0,0010 | 0,38 |

#### FORMULAS

|        | (01)  |
|--------|-------|
| MIN.   |       |
| MAX.   | 1,000 |
| 128235 | 0,312 |
| 128235 | 0,312 |
| 128271 | 0,431 |
| 128271 | 0,431 |
| 128272 | 0,431 |
| 128272 | 0,431 |

(01) Cr + Ni + Mo + Cu + V

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### ENSAYOS DE TRACCIÓN / TENSILE TEST

| COLADA<br>CAST | Nº  | L/T<br>(1) | TP<br>(2) | DIMENSION<br>( inches ) | L.ELAST.<br>YIELD POINT<br>( Mpa ) (3) | R.TRACC.<br>T.STRENGTH<br>( Mpa ) | ALARG.<br>ELONG.<br>( % )<br>(4) | Estricción<br>Reduction<br>of Area<br>( % ) | DUREZA<br>HARDNESS<br>( HRB ) | MEDIA<br>MEAN |
|----------------|-----|------------|-----------|-------------------------|--|-----------------------------------|----------------------------------|---|-------------------------------|---------------|
| MIN.           |     |            |           |                         | 275                                    | 485                               |                                  |   |                               | 99            |
| MAX.           |     |            |           |                         |  |                                   |                                  |   |                               |               |
| 128235         | 1   | L          | P         | 0,740 x 0,228           | 382                                    | 546                               | 31                               |   | 82 82                         | 81 82         |
| 128235         | 1-1 | L          | P         | 0,744 x 0,220           | 369                                    | 539                               | 32                               |   | 82 83                         | 83 83         |
| 128271         | 1   | L          | P         | 0,701 x 0,232           | 378                                    | 551                               | 31                               |   | 83 82                         | 82 82         |
| 128271         | 1-1 | L          | P         | 0,717 x 0,220           | 383                                    | 548                               | 31                               |   | 82 83                         | 84 83         |
| 128272         | 1   | L          | P         | 0,756 x 0,224           | 333                                    | 538                               | 30                               |   | 84 84                         | 83 84         |
| 128272         | 1-1 | L          | P         | 0,748 x 0,217           | 345                                    | 545                               | 31                               |   | 84 84                         | 85 84         |

(1) : L = LONGITUDINAL // T = TRANSVERSAL

(2) : T = Full size tube // P = Strip specimen // C = Cylindrical // F = Flat specimen

(3) : yield point (0,2%)

(4) : Lo = 2" (50 mm)

### ANEXOS / ANNEX

FULLY KILLED  
RADIATION FREE  
MERCURY FREE  
NO WELD REPAIR

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