



EN 10204:2004 / 3.1

CERTIFICADO DE CALIDAD
MILL TEST CERTIFICATE

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N° 0000314235/1 Rev. 000

| | | | |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| CLIENTE: CUSTOMER | BROWNSVILLE STEEL CITY,LLC | PEDIDO / PARTIDA: P.ORDER / ITEM | O.C. 14949 8. |
| PRODUCTO: ARTICLE | TUBERÍA SIN SOLDADURA LAMINADA EN CALIENTE HOT FINISHED SEAMLESS TUBES | REF. FABRICA: WORK ORDER | 300014202 000080 |
| EXTREMOS: ENDS | BISELADOS BEVELLED ENDS | PROTECCIÓN SUPERF: EXT. COATING | LACA SECA EXTERIOR OD DRY LACQUERED |
| NORMA / GRADO: APL.STANDARD AND GRADE | ASTM A53/A53M-10/ASME II SA-53/SA-53M 2011A /ASTM A106/A106M-11/ASME II SA-106/SA-106M 2011A /API 5L 2007 44TH ED. PSL1 B/X42 | PROCESO FUSION: MELTING PROCESS | HORNO ELECTRICO ACERO TOTALMENTE CALMADO ELECTRIC FURNACE // FULLY KILLED |
| ESPEC. ADICIONALES: ADDITIONAL SPECS. | NACE MR0175/ISO 15156.PUB.2009 | FAB. DE PALANQUILLA: BILLETS MANUFACTURE | COLADA CONTINUA CONTINUOUS CASTING |
| DIMENSIONES: DIMENSIONS | 2,375" OD X 0,218" X 20-22 FT. | | |
| MARCAS: MARKING | ESTAMPADO: DIE STAMPING PINTADO: STENCILLED CODIGO COLOR: COLOUR CODE | TRI SPEC 5L-0011 (SELLO API) (MM/AA) 2,375 " X 0,218 " ASTM/ASME A/SA5 3/106/5LP1 B/X42 PSL1 SMLS 3000.0 PSI (LONG. TUBO EN PIES) FT HN (COLA DA) - SPAIN | |
| TRAT. TERMICO: HEAT TREATMENT | NORM. BRUTO LAM. ENFR. AL AIRE / AS ROLLED COOLED IN STILL AIR 920 °C | | |

Lista de Bultos / 129108
Packing List

DESCRIPCION SUMINISTRO / DESCRIPTION OF DELIVERY (I)

| ITEM FAB. T.R. ITEM | ITEM CLI. CLIENTS ITEM | LONG.INDIV (M) INDIVIDUAL LENGTH | COLADA CAST NR. | N° TUBOS QUANTITY | LONG. TOTAL (M) LENGTH | PESO(KG) WEIGHT |
|------------------------|---------------------------|-------------------------------------|--------------------|----------------------|------------------------------|--------------------|
| 000080 | 8. | 6,096 - 6,706 | 111914 | 1.387 | 8.638,080 | 64.489 |
| TOTAL | | | | 1.387 | 8.638,080 | 64.489 |

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



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ENSAYOS NO DESTRUCTIVOS / N.D.T

| ENSAYO / TEST | %CONTROL / TEST RATE(%) | REQUISITOS / REQUIREMENTS | RESULTADO / RESULT |
|-----------------------------------------------------|-------------------------|---------------------------|--------------------|
| VISUAL Y DIMENSIONAL/ VISUAL & DIMENSIONAL INSP. | 100% | | O.K. |
| P.HIDROSTATICA/ HYDROTEST | 100% | 3.000,0 PSI 5 SEC. | O.K. |
| INSP. POR PASO DE ANILLO/ RING GAUGE INSPECTION | 100% | | O.K. |

ENSAYOS TECNOLÓGICOS Y METALÚRGICOS / TECHNOLOGICAL AND METALLURGICAL TEST

DOBLADO AC/ A/SA53/SA106/5L -OK
/BENDING

ANALISIS DE COLADA / CAST ANALYSYS

| | C | Mn | Si | P | S | Cr | Ni | Mo | Cu | V | Al | Ti | Nb | B | C.E. |
|--------|------|------|------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|
| MIN. | | 0,29 | 0,10 | | | | | | | | | | | | |
| MAX. | 0,27 | 1,06 | | 0,030 | 0,0300 | 0,400 | 0,400 | 0,150 | 0,400 | 0,080 | 0,060 | 0,050 | 0,020 | 0,0010 | 0,42 |
| 111914 | 0,16 | 0,74 | 0,28 | 0,015 | 0,0061 | 0,089 | 0,090 | 0,051 | 0,336 | 0,002 | 0,001 | 0,001 | 0,001 | 0,0005 | 0,34 |

ANALISIS DE PRODUCTO / PRODUCT ANALYSIS

| | C | Mn | Si | P | S | Cr | Ni | Mo | Cu | V | Al | Ti | Nb | B | C.E. |
|--------|------|------|------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|
| MIN. | | 0,29 | 0,10 | | | | | | | | | | | | |
| MAX. | 0,27 | 1,06 | | 0,030 | 0,0300 | 0,400 | 0,400 | 0,150 | 0,400 | 0,080 | 0,060 | 0,050 | 0,020 | 0,0010 | 0,42 |
| 111914 | 0,16 | 0,75 | 0,28 | 0,015 | 0,0070 | 0,090 | 0,100 | 0,050 | 0,350 | 0,002 | 0,005 | 0,001 | 0,003 | 0,0002 | 0,34 |
| 111914 | 0,16 | 0,75 | 0,28 | 0,015 | 0,0070 | 0,090 | 0,100 | 0,050 | 0,350 | 0,002 | 0,005 | 0,001 | 0,003 | 0,0002 | 0,34 |

FORMULAS

| | (01) | (02) | (03) |
|--------|-------|-------|-------|
| MIN. | | | |
| MAX. | 1,000 | 0,150 | 0,060 |
| 111914 | 0,592 | 0,006 | 0,005 |
| 111914 | 0,592 | 0,006 | 0,005 |

(01) Cr + Ni + Mo + Cu + V
(02) Nb + Ti + V
(03) Nb + V



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ENSAYOS DE TRACCIÓN
TENSILE TEST

| COLADA CAST | Nº | L/T (1) | T/P (2) | DIMENSION (mm) | L.ELAST. YIELD POINT (N/mm2) (3) | R.TRACC. T.STRENGTH (N/mm2) | ALARG. ELONG. (%) (4) | DUREZA HARDNESS (HRB) |
|----------------|------|------------|------------|---------------------|---------------------------------------------|-------------------------------------|----------------------------------|-------------------------------|
| | | | | | 290 | 415 | | 99 |
| 111914 | 0002 | L | P | 19,00 x 6,200 | 335 | 530 | 32 | 82 |
| 111914 | 0001 | L | P | 18,90 x 6,300 | 334 | 524 | 32 | 82 |

- (1) : L = LONGITUDINAL // T = TRANSVERSAL
(2) : T = Full size tube // P = Strip specimen
(3) : yield point (0,2%)
(4) : Lo = 2" (50,8 mm)

ANEXOS / ANNEX

P.O. NUMBER: BSC 2013-237

* Notify address:

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Brownsville Steel City, LLC
1921 Anei Circle Suite "S"
Brownsville, TX 78521
Ph (956) 5417882