Tenaris

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# CERTIFICADO DE CALIDAD
# INSPECTION CERTIFICATE
( DIN EN 10204 3.1.B - ISO 10474 3.1.B)

Numero: Number: 14219

Pagina/Page: 1 DE 1

Vendido a: Sold to: PLESA ANAHUAC

Pedido del Cliente No: Customers Order No: 100001278

Lista de Empaque: Packing List: 7544

Fecha/Date: 30 de Mayo de 2005

Especificaciones y Grados / Standard or Specification and Steel Grade

**Seamless Fittings according to ASTM A 234-97, A234-02 / ASME A/SA 234 WPB -**

**NACE MR 01.75 ed. 02 - Conform to ASME II Ed. 2001**

Dimensiones y tolerancias / Dimension and tolerances

**ASME B 16.9 and ASME B 16.28 edition 2001**

**Factura/Invoice:**

**Bocas / Ends**

Biselado / Bevelled ends

| DESCRIPCION DE MATERIAL / MATERIAL DESCRIPTION | | | | PRUEBAS MECANICAS / MECHANICAL TEST | | | | PRUEBA DE IMPACTO 0°C / IMPACT TEST 0°C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ART. ITEM | COLADA HEAT CODE | CANTIDA QUANTITY | DESCRIPCION / DESCRIPTION | ESF. CEDENCIA YIELD STRENGTH (Mpa) | ESF. RUPTURA TENSILE STRENGTH (Mpa) | ELONG. %2" | DUREZA HARDNESS HB | DIMENSIONES SAMPLE DIM mm | 1 Joules | 2 Joules | 3 Joules | PROMEDIO AVERAGE Joules |
| 1 | TEF6 | 1 | ELLS 10 X 45 SCH-XH | 311 | 482 | 43 | 128 | | | | | |
| 2 | TYV5 | 5 | ELLS 10 X 45 SCH-XH | 311 | 499 | 42 | 140 | | | | | |
| 3 | T21682 | 25 | ELLS 12 X 45 SCH-XH | 325 | 488 | 42 | 120 | | | | | |
| 4 | T21932 | 18 | ELLS 12 X 90 L.R. SCH-STD | 312 | 463 | 37 | 104 | | | | | |
| 5 | T19909 | 7 | ELLS 12 X 90 L.R. SCH-XH | 331 | 483 | 44 | 137 | | | | | |
| 6 | T21933 | 2 | ELLS 12 X 90 L.R. SCH-XH | 282 | 482 | 43 | 124 | | | | | |
| 7 | T21932 | 12 | ELLS 14 X 90 L.R. SCH-STD | 312 | 463 | 37 | 104 | | | | | |
| 8 | S33411 | 28 | ELLS 3 X 90 L.R. SCH-STD | 354 | 495 | 50 | 135 | | | | | |
| 9 | S33675 | 264 | ELLS 3 X 90 L.R. SCH-STD | 341 | 496 | 51 | 101 | | | | | |
| 10 | S33676 | 236 | ELLS 3 X 90 L.R. SCH-STD | 341 | 496 | 53 | 113 | | | | | |
| 11 | S33639 | 31 | ELLS 4 X 45 SCH-STD | 349 | 498 | 50 | 120 | | | | | |

## ANALISIS QUIMICO / CHEMICAL ANALYSIS

| PROCESO PROCESS | COLADA HEAT CODE | COLADA/HEAT M.P./MOTHER PIPE | %C.E. | %C | %Mn | %P | %S | %Si | %Cr | %Cu | %Mo | %Ni | %v | %Nb |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HF | TEF6 | 15279 | 0.305 | 0.170 | 0.660 | 0.012 | 0.003 | 0.270 | 0.050 | 0.092 | 0.030 | 0.040 | 0.000 | 0.000 |
| HF | TYV5 | 12676 | 0.353 | 0.190 | 0.840 | 0.010 | 0.001 | 0.300 | 0.060 | 0.008 | 0.050 | 0.004 | 0.000 | 0.000 |
| HF | T21682 | 21682 | 0.306 | 0.180 | 0.660 | 0.008 | 0.001 | 0.270 | 0.050 | 0.056 | 0.003 | 0.030 | 0.000 | 0.000 |
| HF | T21932 | 21932 | 0.310 | 0.180 | 0.660 | 0.008 | 0.002 | 0.260 | 0.030 | 0.069 | 0.039 | 0.030 | 0.000 | 0.000 |
| HF | T19909 | 19909 | 0.313 | 0.180 | 0.680 | 0.007 | 0.001 | 0.280 | 0.040 | 0.069 | 0.025 | 0.030 | 0.000 | 0.000 |
| HF | T21933 | 21933 | 0.328 | 0.190 | 0.710 | 0.010 | 0.001 | 0.260 | 0.040 | 0.072 | 0.032 | 0.010 | 0.000 | 0.000 |
| HF | T21932 | 21932 | 0.310 | 0.180 | 0.660 | 0.008 | 0.002 | 0.260 | 0.030 | 0.069 | 0.039 | 0.030 | 0.000 | 0.000 |
| HF | S33411 | 33411 | 0.324 | 0.180 | 0.730 | 0.011 | 0.002 | 0.300 | 0.080 | 0.034 | 0.010 | 0.024 | 0.001 | 0.001 |
| HF | S33675 | 33675 | 0.319 | 0.180 | 0.720 | 0.007 | 0.001 | 0.280 | 0.040 | 0.070 | 0.020 | 0.027 | 0.002 | 0.001 |
| HF | S33676 | 33676 | 0.344 | 0.190 | 0.800 | 0.007 | 0.002 | 0.320 | 0.040 | 0.042 | 0.040 | 0.020 | 0.002 | 0.001 |
| HF | S33639 | 33639 | 0.317 | 0.180 | 0.750 | 0.011 | 0.001 | 0.330 | 0.030 | 0.031 | 0.010 | 0.019 | 0.001 | 0.001 |

Certificamos que los resultados de los Analisis Quimicos y Pruebas Mecanicas son verdaderos o una copia fiel de los certificados enviados por el Fabricante y/o el proveedor de Materia Prima conforme ASTM A106GradeB con N°:

We certify that result of chemical analysis and mechanical test are true and correct copy of the test certificate issued by the manufacturer and/or suplier Raw material certs conform to ASTM A106 Grade B N°:

04002811 03012938 05007805
05008990 04028893 05008822
05008990 218557 218557
218557 218577

"Este material cumple con los requerimientos especificados en la orden"

"The material of this certificate heat number mentioned above is in compliance with the requirements specified in the order".

Notas

Formado en caliente a 780°C-940°C enfriado al aire, Formado en frio normalizado a 940°C max

Tiempo de permanencia 10'

Inspección Dimensional Satisfactoria

HF FORMADO EN CALIENTE/HOT FORMED

Notes

Hot formed fittings in a range from 780°C to 940°C, cooled in still air.

Cold formed normalized at 940°C max

Holding time 10'

Visual dimensionalcheck: Satisfactory

CF: FORMADO EN FRIO/COLD FORMED

Jefe de Aseguramiento de Calidad:
Quality Assurance Coordinator

ING. JOSE MARTINEZ MACIAS

CC-008