



TERNIUM MEXICO, S.A. DE C.V.
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CERTIFICADO DE CALIDAD /
MILL TEST CERTIFICATE
 (EN10204 3.1 – ISO 10474 3.1B)
Fecha de Emisión /Date of Issue
 (DMA) 09/01/2013

No./ Document number
 1007272294

1007272294
 1007272294

Código cliente/ Customer ID
 0000689728

Pedido No./ Sales order
 1003136807

Orden de compra/ Purchase order
 oc 14758

Cliente/ Customer
 PLESA ANAHUAC Y CIAS. S.A. DE C.V.
 AV. VALLE DE LAS ALAMEDAS 66-O
 TULTITLAN
 México
 54940

Remisión/ Delivery
 1007272294

Medio de Transporte/ Means of transportation

Descripción de mercaderías/ Goods description
 VARILLA RECTA 3/4"12 m. R-42

| Datos Generales / General Data | |
|--------------------------------|-------------|
| No. Rollo/Coil id. | Colada/Heat |
| 200019 | 225031 |
| 200019 | 225032 |
| 200019 | 225033 |
| 200019 | 225037 |

1. TS: Tratamiento superficial, Aceitado, Sellado / ST: Superficial treatment, Oiled, Stenciled, etc 2. LE: Limite elástico / YP: Yield Point 3. RT: Resistencia a la tensión / TS: Tensile Strenght
 4. HRBW: Rockwell B Indentador de WC 5. L/LL Limite Inferior / Lower Limit 6. LS/UL Limite Superior / Upper Limit

Observaciones / Comments

C.I. / ID #

Certificamos que el material aquí descrito ha sido inspeccionado y ensayado por personal autorizado independiente del área de manufactura con resultados satisfactorios en concordancia con la norma arriba descrita. Propiedades Mecánicas bajo las normas ASTM A370, E8, E18, E517, E646, EN-10002, según requerimiento y peso de capa bajo ASTM A90 Análisis Químico bajo la norma ASTM E 415 / 1019 / A751
 We here certify that the material described in here has been tested and inspected by authorized personal independent from the manufacturing department with satisfactory results in accordance with requirements of the above specification Mechanical Properties as ASTM A370, E8, E18, E517, E646, EN-10002, as required and coating weight with ASTM A90 Chemical Analysis as ASTM E 415 / 1019 / A751

Firma / Signature

Antonio Maní

Ing. Antonio Maní
 Ternium Labs



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| Datos Generales / General Data | | | |
|--------------------------------|-------------|-------------------------------|-------------|
| No. Rollo/Coil id. | Colada/Heat | Norma de Calidad/Quality Norm | Grado/Grade |
| 200019 | 225031 | NMX B506 | R42 |
| 200019 | 225032 | NMX B506 | R42 |
| 200019 | 225033 | NMX B506 | R42 |
| 200019 | 225037 | NMX B506 | R42 |

| Calidad del Acero / Steel Quality (Propiedades Mecánicas Longitudinales) | | | | | | |
|--|-------------|-------------|------|-----------------------------|-----------|-------|
| No. Rollo/Coil id. | Colada/Heat | LE / YP (2) | | % Elongación / Elongation % | RT/TS (3) | |
| | | kg/cm2 | KSI | | kg/cm2 | KSI |
| 200019 | 225031 | 4648 | 66.1 | 12 | 7786 | 110.7 |
| 200019 | 225032 | 4717 | 67.1 | 10 | 7697 | 109.5 |
| 200019 | 225033 | 4565 | 64.9 | 13 | 7627 | 108.5 |
| 200019 | 225037 | 4608 | 65.5 | 12 | 7903 | 112.4 |

| Calidad del Acero / Steel Quality | | |
|-----------------------------------|-------------|---|
| No. Rollo/Coil id. | Colada/Heat | Doble/Bend Ángulo-Radio/ Angle-Radius L/T |
| 200019 | 225031 | OK |
| 200019 | 225032 | OK |
| 200019 | 225033 | OK |
| 200019 | 225037 | OK |

| Calidad del Acero / Steel Quality (Análisis Químico/Chemical Analysis) | | | | | | | | | | | | | | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| No. Rollo/Coil id. | Colada/Heat | Ceq | C | Mn | P | S | Al | Si | Cu | Ni | Cr | Mo | V | Cb / Nb |
| 200019 | 225031 | 0.625 | 0.400 | 1.200 | 0.019 | 0.024 | 0.000 | 0.150 | 0.181 | 0.110 | 0.112 | 0.038 | 0.003 | 0.000 |

| Calidad del Acero / Steel Quality (Análisis Químico/Chemical Analysis) | | | | | | | | | | | | | | |
|--|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| No. Rollo/Coil id. | Colada/Heat | Ceq | C | Mn | P | S | Al | Si | Cu | Ni | Cr | Mo | V | Cb / Nb |
| 200019 | 225032 | 0.616 | 0.400 | 1.140 | 0.022 | 0.024 | 0.000 | 0.140 | 0.246 | 0.094 | 0.194 | 0.030 | 0.003 | 0.000 |

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Calidad del Acero / Steel Quality (Análisis Químico/Chemical Analysis)

| No. Rollo/Coil id. | Colada/Heat | Ceq | C | Mn | P | S | Al | Si | Cu | Ni | Cr | Mo | V | Cb / Nb |
|--------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 200019 | 225033 | 0.629 | 0.410 | 1.140 | 0.018 | 0.019 | 0.000 | 0.150 | 0.268 | 0.092 | 0.189 | 0.029 | 0.002 | 0.000 |

Calidad del Acero / Steel Quality (Análisis Químico/Chemical Analysis)

| No. Rollo/Coil id. | Colada/Heat | Ceq | C | Mn | P | S | Al | Si | Cu | Ni | Cr | Mo | V | Cb / Nb |
|--------------------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|
| 200019 | 225037 | 0.638 | 0.430 | 1.160 | 0.018 | 0.025 | 0.000 | 0.150 | 0.162 | 0.068 | 0.103 | 0.016 | 0.003 | 0.000 |

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 5. LI/LL Limite inferior / Lower Limit
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Observaciones / Comments

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