



EN10204 3.1 - ISO 10474 3.1B

CERTIFICADO DE CALIDAD - MILL TEST CERTIFICATE

ORIGINAL

MT

TERNIUM MEXICO, S.A. DE C.V
R.F.C. TME-840710-TR4

Av. Universidad No. 992, Colonia Cuauhtémoc, San Nicolás de los Garza, N.L.
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Fecha de emisión (Date of issue)
 (DMA) 14/12/2012



N° (Document number)
 TX51523

0 0 0 0 0 0 0 4 7 9 3 3

| | | |
|--|---|---|
| Código cliente (Customer ID) H000232500 | Pedido No. (Sales Order) 0100852153,0100857124,0100859501 | Orden de compra (Purchase order) 14053,14198 |
| Cliente (Customer) PLESA ANAHUAC Y CIAS. S.A. DE C.V. | Remisión (Delivery) 000000047933 | Medio de transporte (Means of transport) CAMION |
| Dirección (Address) AV. VALLE DE LAS ALAMEDAS 66-O - TULTITLAN | Piezas Totales (Total pieces) 6 | Punto de despacho (Delivery plant) Churubusco |
| Descripción de la mercadería (Goods description) ROLLO FRIO RECOCIDO, ROLLO FRIO RECOCIDO TENSIONIVELADO | | |

Datos Generales (General Data)

| Pieza (Piece) | Colada (Heat) | Peso (Weight) | | Espesor (Thickness) | | Ancho (Width) | |
|------------------|------------------|------------------|-------|------------------------|--------|------------------|-------|
| | | kg | lb | mm | in | mm | in |
| 1734588AI | 1212332012 | 6255 | 13790 | 0.450 | 0.0177 | 915 | 36.02 |
| 1740668AE | 1212461012 | 10582 | 23329 | 2.660 | 0.1047 | 1220 | 48.03 |
| 1740669AF | 1212460012 | 9909 | 21846 | 2.660 | 0.1047 | 1220 | 48.03 |
| 1748155AF | 1242826012 | 7160 | 15785 | 1.900 | 0.0748 | 1220 | 48.03 |
| 1748156AE | 1232931012 | 6470 | 14264 | 1.900 | 0.0748 | 1220 | 48.03 |
| 1748156AG | 1232931012 | 5980 | 13184 | 1.900 | 0.0748 | 1220 | 48.03 |

| Pieza (Piece) | Colada (Heat) | No. Parte (Part) | Descripción (Description) | Norma de Calidad / Grado / Subnorma (Quality Norm / Grade / Sub-Norm) |
|------------------|------------------|---------------------|------------------------------------|--|
| 1734588AI | 1212332012 | | ROLLO FRIO RECOCIDO TENSIONIVELADO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |
| 1740668AE | 1212461012 | | ROLLO FRIO RECOCIDO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |
| 1740669AF | 1212460012 | | ROLLO FRIO RECOCIDO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |
| 1748155AF | 1242826012 | | ROLLO FRIO RECOCIDO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |
| 1748156AE | 1232931012 | | ROLLO FRIO RECOCIDO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |
| 1748156AG | 1232931012 | | ROLLO FRIO RECOCIDO | TER/A 1008 CS TIPO B/GAB (V 2006 REV 1) |

1. RC (YP): Resistencia a la cedencia (Yield Point)

2. RT (TS): Resistencia a la tensión (Tension Strength)

3. TT (TT): Tratamiento Térmico (Thermal Treatment)

4. HRBW: Rockwell B Identador de WC

Observaciones (Comments):

Firma (Signature)

Ing. Antonio Maní
 Ternium Labs

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 E8, E18, E517, E646, EN-10002, E23, JIS Z 2241 según requerimiento y peso de capa bajo ASTM 90. Análisis Químico bajo la norma ASTM E 415 / 1019 We certify that the material described 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 E8, E18, E517, E646, EN-10002, E23, JIS Z 2241 as required and coating weight with ASTM A90. Chemical Analysis as ASTM E 415 / 1019



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0 0 0 0 0 0 0 4 7 9 3 3

Propiedades mecánicas longitudinales (Longitudinal mechanical properties)

| Pieza (Piece) | Colada (Heat) | Tensión (Steel Stress) | | |
|------------------|------------------|------------------------------|------------------------|------------------------|
| | | %Elongacion (%Elongation) | RC (YP) 1 MPA (KSI) | RT (TS) 2 MPA (KSI) |
| 1734588AI | 1212332012 | 33 | 221 / (32.0) | 363 / (52.7) |
| 1740668AE | 1212461012 | 38 | 230 / (33.3) | 341 / (49.5) |
| 1740669AF | 1212460012 | 38 | 225 / (32.7) | 347 / (50.4) |
| 1748155AF | 1242826012 | 40 | 205 / (29.7) | 319 / (46.3) |
| 1748156AE | 1232931012 | 43 | 189 / (27.4) | 315 / (45.7) |
| 1748156AG | 1232931012 | 43 | 189 / (27.4) | 315 / (45.7) |

Ensayos de Calidad del Acero (Steel Quality)

| Pieza (Piece) | Colada (Heat) | Dureza (Hardness) |
|------------------|------------------|----------------------|
| | | (HRBW) 4 |
| 1734588AI | 1212332012 | 47 |
| 1740668AE | 1212461012 | 57 |
| 1740669AF | 1212460012 | 58 |
| 1748155AF | 1242826012 | 49 |
| 1748156AE | 1232931012 | 47 |
| 1748156AG | 1232931012 | 47 |

Calidad del Acero - Análisis Químico (%) (Steel Quality - Heat Analysis (%))

| Colada (Heat) | C | Mn | P | S | Si | Al | V | Ti | Cr | Ni | Mo | B | Cu | Cb |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|
| 1212332012 | 0.081 | 0.346 | 0.009 | 0.009 | 0.014 | 0.038 | 0.002 | 0.001 | 0.010 | 0.029 | 0.001 | 0.0000 | 0.006 | 0.000 |
| 1212460012 | 0.084 | 0.325 | 0.006 | 0.002 | 0.017 | 0.049 | 0.001 | 0.001 | 0.010 | 0.026 | 0.001 | 0.0000 | 0.008 | 0.001 |
| 1212461012 | 0.087 | 0.330 | 0.008 | 0.004 | 0.015 | 0.046 | 0.001 | 0.001 | 0.009 | 0.021 | 0.001 | 0.0001 | 0.011 | 0.002 |
| 1232931012 | 0.080 | 0.317 | 0.008 | 0.001 | 0.020 | 0.040 | 0.001 | 0.001 | 0.009 | 0.022 | 0.001 | 0.0000 | 0.008 | 0.000 |
| 1242826012 | 0.084 | 0.318 | 0.010 | 0.002 | 0.019 | 0.049 | 0.002 | 0.001 | 0.007 | 0.027 | 0.001 | 0.0000 | 0.010 | 0.000 |

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