

Aseguramiento de la Calidad  
 CERTIFICADO DE CALIDAD N°  
 CERTIFICATE OF QUALITY N°

**ACEROS ESPECIALES**

**11-4297A**

|                              |                           |                               |                |
|------------------------------|---------------------------|-------------------------------|----------------|
| CLIENTE<br>CUSTOMER          | <b>LAM. VISTA HERMOSA</b> | GRADO DE ACERO<br>STEEL GRADE | <b>A-36</b>    |
| N° DE COLADA<br>HEAT N°      | <b>42970811</b>           | MEDIDA<br>SECTION SIZE        | <b>2"</b>      |
| IDENTIFICACION<br>COLOR CODE |                           | PERFIL<br>SHAPE               | <b>Redondo</b> |

ANALISIS QUIMICO %  
 CHEMICAL ANALYSIS %

| C   | Mn  | Si  | P    | S    | Cr  | Ni  | Mo   | Al   | Cu  | Sn   | Pb | V | Ti | Nb | B ppm | Ca ppm | O2 ppm | N2 ppm | DI |
|-----|-----|-----|------|------|-----|-----|------|------|-----|------|----|---|----|----|-------|--------|--------|--------|----|
| .17 | .66 | .20 | .011 | .015 | .15 | .10 | .034 | .003 | .28 | .021 |    |   |    |    |       |        |        |        |    |

METALOGRAFIA  
 METALLOGRAPHY

| TAMAÑO DE GRANO<br>GRAIN SIZE | DECARBURIZACION<br>DECARBURIZATION | ESTRUCTURA<br>STRUCTURE | INCLUSIONES NO METALICAS<br>NONMETALLIC-INCLUSIONS |   |   |   |
|-------------------------------|------------------------------------|-------------------------|--|---|---|---|
|                               |                                    |                         | A  | B | C | D |
|                               |                                    |                         |  |   |   |   |


PROPIEDADES MECANICAS  
 MECHANICALS PROPERTIES

| RESISTENCIA A LA TENSIÓN<br>TENSILE STRENGTH (PSI) | LIMITE DE CEDENCIA<br>YIELD STRENGTH (PSI) | % REDUCCION DE AREA<br>REDUCTION IN AREA | % ALARGAMIENTO<br>ELONGATION | DUREZA<br>HARDNESS |
|--|--|--|------------------------------|--------------------|
| <b>69,179 Lbs/Pulg<sup>2</sup></b>                 | <b>49,513 Lbs/Pulg<sup>2</sup></b>         |  | <b>30.06%</b>                | <b>75HRB</b>       |

PRUEBAS ESPECIALES  
 SPECIAL TESTING

OBSERVACIONES:  
 OBSERVATIONS

FECHA  
 DATE 28-Sep-2011 00:07

  
 Jorge Sanchez  
 ASEGURAMIENTO DE CALIDAD  
 QUALITY ASSURANCE DEPARTMENT