



**ACERALIA PERFILES**  
Grupo Arcelor

CARRETERA TOLEDO, KM. 9  
28021 MADRID  
TELEF. (91) 797.23.00 - FAX (91) 505.02.57



Empresa Registrada  
ER-0036/1992  
ER-0152/1993  
ER-0262/1994

## CERTIFICADO DE CALIDAD

APS 3732

|  |                |  |                 |
|--|----------------|--|-----------------|
| DIRECCIÓN DE DESCARGA  |                | CLIENTE  |                 |
| PLESA ANAHUAC, S.A.DE C.V.<br>AV VALLE DE LAS ALAMEDAS NR.66<br>COL.SAN FRANCISCO CHILPAN<br>54940,TULTITLAN EDO.DE MEXICO                         |                | PLESA ANAHUAC, S.A.DE C.V.<br>AV VALLE DE LAS ALAMEDAS NR.66<br>COL.SAN FRANCISCO CHILPAN<br>54940,TULTITLAN EDO.DE MEXICO |                 |
| MATERIAL EXPEDIDO Y CERTIFICADO POR  |                | CARTA DE CREDITO   | PUERTO DE CARGA |
| ACERALIA PERFILES OLABERRIA, S.L.<br>CARRETERA MADRID - IRUN, KM. 419<br>20212 OLABERRIA (Gulpúzcoa)<br>TELEF. (943) 80.50.00 - FAX (943) 88.04.04 |                |  | PASAJES, SPAIN  |
|  |                | PUERTO DE DESCARGA   | BARCO           |
|  |                | VERACRUZ (MEXICO)  | ATLANTIS PRIDE  |
| N / REFERENCIA   | Nº DE CONTRATO | Nº DE PEDIDO   | FECHA           |
| MERCHE   | E-10424        | 3º TRIM 04   | 31/08/2004      |

Material: WF Vigas, calidad DUAL ASTM A-36/A 572 Gr. 50

El exportador de los productos incluidos en el presente documento,  
Autorización aduanera no.

ACERALIA PERFILES MADRID, S.L. ES/28/0047/03  
ACERALIA PERFILES BERGARA, S.A. ES/48/0021/03  
ACERALIA PERFILES OLABERRIA S.L. ES/20/0040/03

Declara que, salvo indicación en sentido contrario, estos  
productos gozan de un origen preferencial ESPAÑA

| MATERIAL       | LARGO | PAQUETE | BARRAS<br>PAQUETE | TOTAL<br>BARRAS | PESO<br>PAQUETE | PESO TOTAL | COLADAS   |
|----------------|-------|---------|-------------------|-----------------|-----------------|------------|---|
| / AMARILLO     |       |         |                   |                 |                 |            |   |
| WF BEAMS 8x10  | 40'   | 20      | 27                | 540             | 4898            | 97.960     | 44783,44784,44785,44787,44788                         |
| WF BEAMS 10x22 | 40'   | 13      | 12                | 156             | 4790            | 62.270     | 44870,44882   |
| WF BEAMS 12x14 | 40'   | 13      | 18                | 234             | 4571            | 59.423     | 44898,44902,44903,44904                               |
| WF BEAMS 12x22 | 40'   | 21      | 12                | 252             | 4790            | 100.590    | 44886,44891,44892,44897                               |
| WF BEAMS 12x26 | 40'   | 21      | 10                | 210             | 4717            | 99.057     | 44819,44821,44822,44829,44830,44831,44833             |
| WF BEAMS 12x30 | 40'   | 14      | 8                 | 112             | 4355            | 60.970     | 44814,44815,44816                                     |
| WF BEAMS 12x35 | 40'   | 12      | 8                 | 96              | 5081            | 60.972     | 44810,44812,44813                                     |
| WF BEAMS 16x50 | 40'   | 22      | 5                 | 110             | 4536            | 99.792     | 44863,44864,44865                                     |
| WF BEAMS 18x71 | 40'   | 19      | 4                 | 76              | 5153            | 97.907     | 44811,44812,44813,44814,44815,44816                   |
| WF BEAMS 18x50 | 40'   | 28      | 4                 | 112             | 3629            | 101.612    | 44789,44790,44791,44792,44794,44795,44796,44797,44798 |
| WF BEAMS 18x86 | 40'   | 1       | 2                 | 2               | 3121            | 3.121      | 21133   |

TOTAL PAQUETES 184

TOTAL PESO 843.674 Kg.



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ER-0036/1992  
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ER-0262/1994

## CERTIFICADO DE CALIDAD

APS 3732

| C70.E   | MATERIAL SIZE | COLADA HEAT | COMPOSICION QUIMICA (%)<br>CHEMICAL COMPOSITION (%) |     |      |      |      |      |      |      |      |      |      |      |      |    | Cev |
|---------|---------------|-------------|---|-----|------|------|------|------|------|------|------|------|------|------|------|----|-----|
|         |               |             | C   | Mn  | SI   | P    | S    | N    | V    | Cr   | NI   | Mo   | Cu   | Nb   | Al   | TI |     |
| B11     | B08           | C71         | C72   | C73 | C74  | C75  | C76  | C77  | C78  |      |      |      |      |      |      |    |     |
| W-10x22 | 44870         | ,11         | 1,25  | ,21 | ,020 | ,024 | ,011 | ,002 | ,141 | ,116 | ,025 | ,579 | ,018 | ,001 | ,003 |    | ,40 |
| W-10x22 | 44882         | ,10         | 1,13  | ,18 | ,020 | ,025 | ,011 | ,002 | ,136 | ,138 | ,024 | ,547 | ,018 | ,001 | ,003 |    | ,36 |
| W-12x14 | 44898         | ,09         | 1,14  | ,21 | ,024 | ,028 | ,010 | ,002 | ,120 | ,128 | ,024 | ,578 | ,018 | ,002 | ,003 |    | ,36 |
| W-12x14 | 44902         | ,10         | 1,10  | ,20 | ,022 | ,027 | ,010 | ,002 | ,133 | ,119 | ,023 | ,568 | ,017 | ,001 | ,003 |    | ,36 |
| W-12x14 | 44903         | ,09         | 1,11  | ,19 | ,025 | ,033 | ,011 | ,002 | ,124 | ,123 | ,024 | ,578 | ,018 | ,001 | ,003 |    | ,35 |
| W-12x14 | 44904         | ,09         | 1,11  | ,19 | ,021 | ,030 | ,011 | ,002 | ,128 | ,124 | ,023 | ,569 | ,018 | ,001 | ,003 |    | ,35 |
| W-12x22 | 44886         | ,11         | 1,02  | ,20 | ,023 | ,032 | ,010 | ,002 | ,145 | ,120 | ,023 | ,574 | ,011 | ,002 | ,003 |    | ,36 |
| W-12x22 | 44891         | ,09         | 1,12  | ,20 | ,023 | ,031 | ,010 | ,002 | ,131 | ,119 | ,023 | ,570 | ,019 | ,001 | ,003 |    | ,35 |
| W-12x22 | 44892         | ,09         | 1,11  | ,20 | ,023 | ,028 | ,010 | ,002 | ,132 | ,122 | ,023 | ,580 | ,019 | ,001 | ,003 |    | ,35 |
| W-12x22 | 44897         | ,09         | 1,12  | ,20 | ,023 | ,031 | ,010 | ,002 | ,133 | ,121 | ,023 | ,570 | ,019 | ,001 | ,003 |    | ,35 |
| W-12x26 | 44819         | ,08         | 1,18  | ,19 | ,030 | ,026 | ,009 | ,002 | ,184 | ,146 | ,025 | ,576 | ,017 | ,002 | ,003 |    | ,37 |
| W-12x26 | 44821         | ,09         | 1,30  | ,20 | ,019 | ,029 | ,009 | ,002 | ,139 | ,183 | ,028 | ,579 | ,023 | ,001 | ,003 |    | ,39 |
| W-12x26 | 44822         | ,11         | 1,20  | ,19 | ,019 | ,024 | ,010 | ,002 | ,130 | ,138 | ,024 | ,547 | ,024 | ,001 | ,003 |    | ,38 |
| W-12x26 | 44829         | ,09         | 1,07  | ,18 | ,024 | ,024 | ,010 | ,038 | ,160 | ,135 | ,024 | ,580 | ,003 | ,002 | ,013 |    | ,36 |
| W-12x26 | 44830         | ,09         | 1,10  | ,19 | ,023 | ,022 | ,011 | ,039 | ,158 | ,131 | ,024 | ,578 | ,003 | ,002 | ,014 |    | ,36 |
| W-12x26 | 44831         | ,09         | 1,08  | ,19 | ,023 | ,023 | ,011 | ,039 | ,157 | ,132 | ,024 | ,575 | ,003 | ,002 | ,016 |    | ,36 |
| W-12x26 | 44833         | ,09         | 1,15  | ,20 | ,026 | ,019 | ,011 | ,046 | ,174 | ,127 | ,024 | ,545 | ,003 | ,002 | ,014 |    | ,38 |
| W-12x30 | 44814         | ,09         | 1,21  | ,20 | ,017 | ,031 | ,011 | ,002 | ,126 | ,152 | ,023 | ,578 | ,027 | ,001 | ,003 |    | ,37 |
| W-12x30 | 44815         | ,08         | 1,23  | ,20 | ,016 | ,029 | ,011 | ,002 | ,124 | ,163 | ,024 | ,577 | ,028 | ,001 | ,003 |    | ,37 |
| W-12x30 | 44816         | ,10         | 1,18  | ,19 | ,017 | ,029 | ,010 | ,002 | ,100 | ,118 | ,020 | ,535 | ,022 | ,001 | ,003 |    | ,36 |
| W-12x35 | 44810         | ,09         | 1,15  | ,17 | ,017 | ,024 | ,011 | ,002 | ,132 | ,128 | ,020 | ,578 | ,021 | ,002 | ,003 |    | ,36 |
| W-12x35 | 44812         | ,09         | 1,17  | ,19 | ,017 | ,026 | ,011 | ,002 | ,108 | ,133 | ,020 | ,543 | ,024 | ,002 | ,003 |    | ,36 |
| W-12x35 | 44813         | ,09         | 1,16  | ,18 | ,016 | ,025 | ,010 | ,002 | ,107 | ,131 | ,020 | ,540 | ,024 | ,002 | ,003 |    | ,36 |
| W-16x50 | 44863         | ,09         | 1,12  | ,19 | ,023 | ,032 | ,010 | ,002 | ,128 | ,121 | ,023 | ,573 | ,018 | ,002 | ,003 |    | ,35 |
| W-16x50 | 44864         | ,09         | 1,15  | ,20 | ,023 | ,030 | ,010 | ,002 | ,128 | ,122 | ,023 | ,572 | ,019 | ,002 | ,003 |    | ,36 |
| W-16x50 | 44865         | ,09         | 1,16  | ,20 | ,026 | ,035 | ,010 | ,002 | ,148 | ,137 | ,026 | ,577 | ,018 | ,002 | ,003 |    | ,36 |
| W-18x50 | 44789         | ,09         | 1,13  | ,19 | ,019 | ,034 | ,010 | ,002 | ,118 | ,126 | ,022 | ,511 | ,020 | ,001 | ,002 |    | ,35 |
| W-18x50 | 44790         | ,09         | 1,10  | ,19 | ,017 | ,024 | ,010 | ,002 | ,112 | ,123 | ,021 | ,492 | ,017 | ,001 | ,003 |    | ,34 |
| W-18x50 | 44791         | ,10         | 1,20  | ,21 | ,021 | ,022 | ,009 | ,002 | ,164 | ,137 | ,024 | ,540 | ,019 | ,002 | ,003 |    | ,39 |
| W-18x50 | 44792         | ,11         | 1,15  | ,20 | ,023 | ,021 | ,010 | ,002 | ,176 | ,123 | ,023 | ,525 | ,014 | ,002 | ,003 |    | ,38 |
| W-18x50 | 44794         | ,10         | 1,15  | ,18 | ,021 | ,020 | ,010 | ,002 | ,177 | ,127 | ,022 | ,556 | ,017 | ,001 | ,003 |    | ,38 |
| W-18x50 | 44795         | ,10         | 1,15  | ,20 | ,016 | ,023 | ,010 | ,002 | ,123 | ,138 | ,022 | ,539 | ,018 | ,002 | ,003 |    | ,37 |
| W-18x50 | 44796         | ,12         | 1,23  | ,19 | ,022 | ,011 | ,012 | ,002 | ,179 | ,121 | ,019 | ,540 | ,026 | ,003 | ,004 |    | ,41 |
| W-18x50 | 44797         | ,13         | 1,25  | ,19 | ,022 | ,016 | ,009 | ,002 | ,184 | ,127 | ,019 | ,563 | ,025 | ,002 | ,003 |    | ,42 |
| W-18x50 | 44798         | ,10         | 1,19  | ,21 | ,018 | ,030 | ,011 | ,002 | ,145 | ,144 | ,020 | ,567 | ,022 | ,001 | ,003 |    | ,38 |
| W-18x71 | 44811         | ,10         | 1,13  | ,17 | ,022 | ,029 | ,010 | ,002 | ,122 | ,124 | ,026 | ,573 | ,023 | ,002 | ,003 |    | ,36 |
| W-18x71 | 44812         | ,09         | 1,10  | ,18 | ,024 | ,024 | ,011 | ,002 | ,150 | ,118 | ,022 | ,569 | ,015 | ,001 | ,003 |    | ,35 |
| W-18x71 | 44813         | ,10         | 1,13  | ,17 | ,022 | ,029 | ,010 | ,002 | ,126 | ,124 | ,025 | ,578 | ,023 | ,001 | ,003 |    | ,36 |
| W-18x71 | 44814         | ,12         | 1,13  | ,18 | ,020 | ,027 | ,010 | ,002 | ,097 | ,120 | ,022 | ,525 | ,018 | ,002 | ,003 |    | ,38 |
| W-18x71 | 44815         | ,12         | 1,14  | ,18 | ,021 | ,027 | ,010 | ,002 | ,098 | ,121 | ,023 | ,529 | ,019 | ,001 | ,003 |    | ,38 |
| W-18x71 | 44816         | ,12         | 1,14  | ,18 | ,021 | ,028 | ,010 | ,002 | ,098 | ,121 | ,023 | ,528 | ,020 | ,002 | ,003 |    | ,37 |
| W-18x86 | 21133         | ,10         | 1,02  | ,17 | ,017 | ,020 | ,011 | ,026 | ,131 | ,182 | ,034 | ,533 | ,003 | ,002 | ,002 |    | ,36 |
| W-8x10  | 44783         | ,11         | 1,20  | ,18 | ,017 | ,027 | ,011 | ,002 | ,129 | ,143 | ,021 | ,558 | ,022 | ,001 | ,003 |    | ,39 |
| W-8x10  | 44784         | ,11         | 1,23  | ,22 | ,017 | ,027 | ,009 | ,002 | ,126 | ,142 | ,021 | ,561 | ,022 | ,001 | ,003 |    | ,39 |
| W-8x10  | 44785         | ,11         | 1,18  | ,20 | ,018 | ,025 | ,011 | ,002 | ,122 | ,131 | ,020 | ,535 | ,020 | ,001 | ,003 |    | ,38 |
| W-8x10  | 44787         | ,10         | 1,13  | ,19 | ,019 | ,026 | ,009 | ,002 | ,125 | ,127 | ,020 | ,513 | ,019 | ,001 | ,003 |    | ,36 |



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## CERTIFICADO DE CALIDAD

APS 3732

| C70E | MATERIAL SIZE | COLADA HEAT | COMPOSICION QUIMICA (%)<br>CHEMICAL COMPOSITION (%) |      |     |      |      |      |      |      |      |      |      |      |      |      |     |     |
|------|---------------|-------------|---|------|-----|------|------|------|------|------|------|------|------|------|------|------|-----|-----|
|      |               |             | C   | Mn   | Si  | P    | S    | N    | V    | Cr   | Ni   | Mo   | Cu   | Nb   | Al   | Ti   | Cev |     |
| B11  | B08           |             | C71   | C72  | C73 | C74  | C75  | C76  | C77  | C78  |      |      |      |      |      |      |     |     |
|      | W-8x10        | 44788       | ,08   | 1,16 | ,20 | ,024 | ,026 | ,010 | ,002 | ,137 | ,124 | ,021 | ,577 | ,017 | ,002 | ,003 |     | ,36 |

| MATERIAL SIZE | COLADA HEAT | PROPIEDADES MECANICAS<br>MECHANICAL PROPERTIES |        |                  |                 | FLEXIÓN POR CHOQUE<br>IMPACT TEST |        |       |       |       |          |
|---------------|-------------|--|--------|------------------|-----------------|-----------------------------------|--------|-------|-------|-------|----------|
|               |             | ReH MPa  | Rm MPa | A%<br>LO=5.65VSo | Doblado<br>180° | °C                                | KV300  | V1 J. | V2 J. | V3 J. | Media J. |
| B11           | B08         | C11  | C12    | C13              | C50             | C03                               | C40/41 | C42   |       |       | C43      |
| W-10x22       | 44870       | 383  | 547    | 27,4             |                 | +20°                              | 5      | 36    | 40    | 35    | 37       |
| W-10x22       | 44882       | 359  | 539    | 31,2             |                 | +20°                              | 5      | 44    | 41    | 37    | 41       |
| W-12x14       | 44898       | 374  | 538    | 30,4             |                 | +20°                              | 4      | 71    | 58    | 55    | 61       |
| W-12x14       | 44902       | 377  | 545    | 30,4             |                 | +20°                              | 4      | 50    | 43    | 43    | 45       |
| W-12x14       | 44903       | 377  | 540    | 30,              |                 | +20°                              | 4      | 57    | 43    | 55    | 52       |
| W-12x14       | 44904       | 376  | 545    | 30,3             |                 | +20°                              | 4      | 66    | 48    | 60    | 58       |
| W-12x22       | 44886       | 391  | 547    | 31,9             |                 | +20°                              | 5      | 41    | 41    | 36    | 39       |
| W-12x22       | 44891       | 409  | 538    | 34,              |                 | +20°                              | 5      | 40    | 38    | 37    | 38       |
| W-12x22       | 44892       | 395  | 539    | 33,7             |                 | +20°                              | 5      | 37    | 40    | 37    | 38       |
| W-12x22       | 44897       | 382  | 542    | 32,2             |                 | +20°                              | 5      | 43    | 38    | 38    | 40       |
| W-12x26       | 44819       | 359  | 544    | 26,8             |                 | +20°                              | 5      | 44    | 38    | 37    | 40       |
| W-12x26       | 44821       | 357  | 542    | 26,4             |                 | +20°                              | 5      | 44    | 37    | 36    | 39       |
| W-12x26       | 44822       | 394  | 541    | 23,3             |                 | +20°                              | 5      | 43    | 37    | 36    | 39       |
| W-12x26       | 44829       | 415  | 537    | 30,8             |                 | +20°                              | 5      | 150   | 128   | 147   | 142      |
| W-12x26       | 44830       | 415  | 539    | 31,4             |                 | +20°                              | 5      | 177   | 164   | 187   | 176      |
| W-12x26       | 44831       | 405  | 530    | 30,4             |                 | +20°                              | 5      | 74    | 59    | 72    | 68       |
| W-12x26       | 44833       | 432  | 540    | 29,3             |                 | +20°                              | 5      | 188   | 159   | 158   | 168      |
| W-12x30       | 44814       | 380  | 546    | 26,4             |                 | +20°                              | 5      | 50    | 41    | 40    | 44       |
| W-12x30       | 44815       | 368  | 547    | 26,8             |                 | +20°                              | 5      | 46    | 38    | 35    | 40       |
| W-12x30       | 44816       | 397  | 541    | 27,3             |                 | +20°                              | 5      | 37    | 36    | 36    | 36       |
| W-12x35       | 44810       | 388  | 546    | 26,4             |                 | +20°                              | 5      | 42    | 38    | 42    | 41       |
| W-12x35       | 44812       | 404  | 541    | 25,9             |                 | +20°                              | 5      | 38    | 38    | 38    | 38       |
| W-12x35       | 44813       | 402  | 540    | 27,6             |                 | +20°                              | 5      | 40    | 37    | 35    | 37       |
| W-16x50       | 44863       | 393  | 538    | 31,2             |                 | +20°                              | 7,5    | 37    | 37    | 41    | 38       |
| W-16x50       | 44864       | 379  | 549    | 27,6             |                 | +20°                              | 7,5    | 39    | 41    | 39    | 40       |
| W-16x50       | 44865       | 368  | 545    | 27,3             |                 | +20°                              | 7,5    | 46    | 36    | 40    | 41       |
| W-18x50       | 44789       | 404  | 546    | 27,2             |                 | +20°                              | 10     | 63    | 50    | 52    | 55       |
| W-18x50       | 44790       | 405  | 539    | 30,4             |                 | +20°                              | 10     | 86    | 66    | 77    | 76       |
| W-18x50       | 44791       | 384  | 548    | 27,              |                 | +20°                              | 10     | 52    | 40    | 46    | 46       |
| W-18x50       | 44792       | 387  | 540    | 27,4             |                 | +20°                              | 10     | 60    | 56    | 62    | 59       |
| W-18x50       | 44794       | 415  | 542    | 28,6             |                 | +20°                              | 10     | 91    | 77    | 87    | 85       |
| W-18x50       | 44795       | 424  | 544    | 28,6             |                 | +20°                              | 10     | 94    | 84    | 100   | 93       |
| W-18x50       | 44796       | 412  | 545    | 27,3             |                 | +20°                              | 10     | 78    | 61    | 80    | 73       |
| W-18x50       | 44797       | 408  | 543    | 27,5             |                 | +20°                              | 10     | 46    | 40    | 35    | 40       |
| W-18x50       | 44798       | 434  | 548    | 30,3             |                 | +20°                              | 10     | 117   | 94    | 91    | 101      |
| W-18x71       | 44811       | 400  | 546    | 27,6             |                 | +20°                              | 10     | 51    | 44    | 49    | 48       |
| W-18x71       | 44812       | 381  | 536    | 30,5             |                 | +20°                              | 10     | 68    | 61    | 60    | 63       |
| W-18x71       | 44813       | 403  | 546    | 27,8             |                 | +20°                              | 10     | 54    | 42    | 51    | 49       |
| W-18x71       | 44814       | 403  | 547    | 28,3             |                 | +20°                              | 10     | 50    | 47    | 47    | 48       |

TRANSPORTES ACTIVOS  
SERVICIO DE LOGÍSTICA



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ER-0036/1992  
ER-0152/1993  
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**APS 3732**

**CERTIFICADO DE CALIDAD**

| MATERIAL<br>SIZE | COLADA<br>HEAT | PROPIEDADES MECANICAS<br>MECHANICAL PROPERTIES |               |                         |                        | FLEXIÓN POR CHOQUE<br>IMPACT TEST |                |              |              |              |                    |
|------------------|----------------|--|---------------|-------------------------|------------------------|-----------------------------------|----------------|--------------|--------------|--------------|--------------------|
|                  |                | ReH MPa<br>C11                                 | Rm MPa<br>C12 | A%<br>L0=5.65VS0<br>C13 | Doblado<br>180°<br>C06 | °C<br>C09                         | KV300<br>C04F1 | V1 J.<br>C02 | V2 J.<br>C02 | V3 J.<br>C02 | Media<br>J.<br>C03 |
| W-18x71          | 44816          | 412  | 543           | 26,5                    |                        | +20°                              | 10             | 61           | 47           | 59           | 56                 |
| W-18x86          | 21133          | 365  | 508           | 38,1                    |                        | +20°                              | 10             | 78           | 68           | 69           | 72                 |
| W-8x10           | 44783          | 364  | 550           | 28,5                    |                        | +20°                              | 3              | 52           | 46           | 53           | 50                 |
| W-8x10           | 44784          | 374  | 544           | 32,1                    |                        | +20°                              | 3              | 59           | 55           | 58           | 57                 |
| W-8x10           | 44785          | 362  | 548           | 33,1                    |                        | +20°                              | 3              | 76           | 64           | 71           | 70                 |
| W-8x10           | 44787          | 365  | 549           | 30,2                    |                        | +20°                              | 3              | 79           | 59           | 64           | 67                 |
| W-8x10           | 44788          | 364  | 539           | 29,6                    |                        | +20° <sup>b</sup>                 | 3              | 53           | 57           | 62           | 61                 |

**47 análisis**

D01: Certificados que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.  
B06: Marca APO

Luis Maria Lakunza

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| PLESA ANAHUAC, S.A.DE C.V.<br>AV VALLE DE LAS ALAMEDAS NR.66<br>COL.SAN FRANCISCO CHILPAN<br>54940,TULTITLAN EDO.DE MEXICO |                | PLESA ANAHUAC, S.A.DE C.V.<br>AV VALLE DE LAS ALAMEDAS NR.66<br>COL.SAN FRANCISCO CHILPAN<br>54940,TULTITLAN EDO.DE MEXICO |                       |
| MATERIAL EXPEDIDO Y CERTIFICADO POR  |                | CARTA DE CREDITO   | PUERTO DE CARGA       |
| ACERALIA PERFILES MADRID<br>CARRETERA TOLEDO, KM. 9<br>28021 MADRID<br>TELEF. (91) 797.23.00 - FAX (91) 795.31.81          |                |  | <b>PASAJES, SPAIN</b> |
|  |                | PUERTO DE DESCARGA   | BARCO                 |
|  |                | <b>VERACRUZ (MEXICO)</b>   | <b>ATLANTIS PRIDE</b> |
| N / REFERENCIA   | Nº DE CONTRATO | Nº DE PEDIDO   | FECHA                 |
| <b>MERCHE</b>  | <b>E-10424</b> | <b>3º TRIM 04</b>  | <b>31/08/2004</b>     |

Material: WF Vigas, calidad DUAL ASTM A-36/A 572 Gr. 50

El exportador de los productos incluidos en el presente documento, Autorización aduanera no.

ACERALIA PERFILES MADRID, S.L. ES/28/0047/03  
 ACERALIA PERFILES BERGARA, S.A. ES/48/0021/03  
 ACERALIA PERFILES OLABERRIA S.L. ES/20/0040/03

Declara que, salvo indicación en sentido contrario, estos productos gozan de un origen preferencial ESPAÑA

| MATERIAL          | LARGO | PAQUETE | BARRAS PAQUETE | TOTAL BARRAS | PESO PAQUETE | PESO TOTAL | COLADAS                                   |
|-------------------|-------|---------|----------------|--------------|--------------|------------|---|
| <b>/ AMARILLO</b> |       |         |                |              |              |            |   |
| WF BEAMS 18x76    | 40'   | 18      | 4              | 72           | 5516         | 99.288     | 60443,60460,60485,60486,60487,60490,60491 |
| WF BEAMS 18x86    | 40'   | 20      | 3              | 60           | 4681         | 93.620     | 60517,60518,60519,60520                   |

TOTAL PAQUETES **38**TOTAL PESO **192.908 Kg.**

A02 EN 10204/3.1.b

**ASTM A36 - A572 G50/A6**

(B01/B02/B03) A03

| MATERIAL SIZE | COLADA HEAT | COMPOSICION QUIMICA (%)<br>CHEMICAL COMPOSITION (%) |     |     |      |      |      |      |      |      |      |      |      |      |      |  |  | Cev |
|---------------|-------------|---|-----|-----|------|------|------|------|------|------|------|------|------|------|------|--|--|-----|
|               |             | C   | Mn  | Si  | P    | S    | N    | V    | Cr   | Ni   | Mo   | Cu   | Nb   | Al   | Ti   |  |  |     |
| B11           | B08         | C71   | C72 | C73 | C74  | C75  | C76  | C77  | C78  |      |      |      |      |      |      |  |  |     |
| W-18x76       | 60443       | ,09   | ,81 | ,22 | ,016 | ,018 | ,009 | ,002 | ,082 | ,110 | ,018 | ,504 | ,016 | ,002 | ,002 |  |  | ,28 |
| W-18x76       | 60460       | ,08   | ,80 | ,20 | ,020 | ,015 | ,012 | ,002 | ,120 | ,110 | ,022 | ,584 | ,017 | ,002 | ,002 |  |  | ,29 |
| W-18x76       | 60485       | ,08   | ,88 | ,19 | ,028 | ,019 | ,011 | ,003 | ,143 | ,114 | ,022 | ,562 | ,017 | ,004 | ,002 |  |  | ,31 |
| W-18x76       | 60486       | ,08   | ,81 | ,22 | ,021 | ,020 | ,010 | ,002 | ,190 | ,094 | ,021 | ,463 | ,017 | ,002 | ,002 |  |  | ,29 |
| W-18x76       | 60487       | ,08   | ,81 | ,21 | ,024 | ,020 | ,011 | ,002 | ,152 | ,100 | ,020 | ,513 | ,017 | ,003 | ,002 |  |  | ,29 |
| W-18x76       | 60490       | ,07   | ,80 | ,23 | ,016 | ,018 | ,012 | ,001 | ,127 | ,138 | ,022 | ,544 | ,017 | ,003 | ,002 |  |  | ,28 |
| W-18x76       | 60491       | ,08   | ,85 | ,21 | ,018 | ,017 | ,011 | ,002 | ,125 | ,125 | ,020 | ,568 | ,018 | ,002 | ,002 |  |  | ,30 |
| W-18x86       | 60517       | ,09   | ,73 | ,20 | ,016 | ,017 | ,011 | ,002 | ,106 | ,133 | ,024 | ,621 | ,018 | ,002 | ,002 |  |  | ,29 |
| W-18x86       | 60518       | ,09   | ,71 | ,20 | ,018 | ,018 | ,011 | ,002 | ,118 | ,133 | ,025 | ,613 | ,017 | ,002 | ,002 |  |  | ,28 |

**ACERALIA PERFILES**  
Grupo Arcelor

AVETERA TOLEDO, KM. 9

021 MADRID

ELEF. (91) 797.23.00 - FAX (91) 505.02.57



APS 3732

**CERTIFICADO DE CALIDAD**

| MATERIAL SIZE | COLADA HEAT | COMPOSICION QUIMICA (%)<br>CHEMICAL COMPOSITION (%) |        |                  |              |    |                           |       |       |       |          |    |    |    | FLEXION POR CHOQUE<br>IMPACT TEST |       |       |       |          |  |
|---------------|-------------|---|--------|------------------|--------------|----|---------------------------|-------|-------|-------|----------|----|----|----|-----------------------------------|-------|-------|-------|----------|--|
|               |             | C   | Mn     | Si               | P            | S  | N                         | V     | Cr    | Ni    | Mo       | Cu | Nb | Al | Ti                                | V1 j. | V2 j. | V3 j. | Media j. |  |
| MATERIAL SIZE | COLADA HEAT | PROPIEDADES MECANICAS<br>MECHANICAL PROPERTIES      |        |                  |              |    | Doblado 180°<br>180° BEND |       |       |       |          | °C |    |    |                                   |       |       |       |          |  |
|               |             | ReH Mpa   | Rm Mpa | A%<br>LO=5.65VS0 | Doblado 180° | °C | KV300                     | V1 j. | V2 j. | V3 j. | Media j. |    |    |    |                                   |       |       |       |          |  |
| W-18x86       | 60520       | 376   | 479    | 25,6             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60443       | 372   | 480    | 25,4             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60460       | 376   | 481    | 23,7             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60486       | 372   | 480    | 24,3             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60487       | 371   | 480    | 25,4             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60490       | 374   | 480    | 23,9             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x76       | 60491       | 376   | 481    | 24,7             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x86       | 60517       | 369   | 475    | 25,3             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x86       | 60518       | 361   | 473    | 27,2             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x86       | 60519       | 364   | 474    | 26,1             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |
| W-18x86       | 60520       | 371   | 477    | 23,7             |              |    |                           |       |       |       |          |    |    |    |                                   |       |       |       |          |  |

**11 analisis**

1) Certificamos que los aceros arriba indicados han sido satisfactoriamente probados de acuerdo con la especificación.

2) Marca APN

Miguel Tusquellas

Z01