

COMPANIA ESPAÑOLA DE LAMINACION, S.L.
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CELSA
 BARCELONA



| Material (L=Lenght) | Heat Number | CHEMICAL ANALYSIS | | | | | | | | | | | | | | | MECHANICAL PROPERTIES | | | |
|------------------------------------|----------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-----------------------|----------------------|-------------------------|-----------------|
| | | C | Mn | Si | S | P | Cr | Ni | Cu | Sn | Mo | V | Nb | AL | N | CE | Yield Str. | Ten- sile Str. | Yield/ Tens. Str. | Elong. 8 in. |
| | | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | % | MPA | MPA | |
| GRADO 50 W14X5.0X22 L.40fts(12.2m) | CE183306 | 0.090 | 1.250 | 0.190 | 0.030 | 0.022 | 0.110 | 0.130 | 0.370 | 0.015 | 0.023 | 0.071 | 0.002 | 0.003 | 0.0115 | 0.373 | 423 | 550 | 0.769 | 29.6 |
| GRADO 50 W14X5.0X22 L.40fts(12.2m) | CE183306 | 0.090 | 1.250 | 0.190 | 0.030 | 0.022 | 0.110 | 0.130 | 0.370 | 0.015 | 0.023 | 0.071 | 0.002 | 0.003 | 0.0115 | 0.373 | 407 | 528 | 0.771 | 30.2 |
| GRADO 50 W8X4X10 L.40fts(12.192m) | CE183306 | 0.090 | 1.250 | 0.190 | 0.030 | 0.022 | 0.110 | 0.130 | 0.370 | 0.015 | 0.023 | 0.071 | 0.002 | 0.003 | 0.0115 | 0.373 | 422 | 545 | 0.774 | 29.2 |
| GRADO 50 W8X4X10 L.40fts(12.192m) | CE183306 | 0.090 | 1.250 | 0.190 | 0.030 | 0.022 | 0.110 | 0.130 | 0.370 | 0.015 | 0.023 | 0.071 | 0.002 | 0.003 | 0.0115 | 0.373 | 420 | 545 | 0.771 | 29.6 |
| GRADO 50 W12X6.5X26 L.40fts(12.2m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 422 | 545 | 0.774 | 29.2 |
| GRADO 50 W12X6.5X26 L.40fts(12.2m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 420 | 545 | 0.771 | 29.5 |
| GRADO 50 W14X5.0X22 L.40fts(12.2m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 420 | 546 | 0.769 | 29.9 |
| GRADO 50 W14X5.0X22 L.40fts(12.2m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 405 | 526 | 0.770 | 30.2 |
| GRADO 50 W8X4X15 L.40fts(12.192m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 422 | 545 | 0.774 | 29.2 |
| GRADO 50 W8X4X15 L.40fts(12.192m) | CE183307 | 0.090 | 1.250 | 0.180 | 0.026 | 0.024 | 0.150 | 0.110 | 0.370 | 0.015 | 0.021 | 0.067 | 0.002 | 0.002 | 0.0109 | 0.378 | 420 | 545 | 0.771 | 29.6 |
| GRADO 50 W12X6.5X26 L.40fts(12.2m) | CE183308 | 0.110 | 1.240 | 0.180 | 0.026 | 0.022 | 0.120 | 0.130 | 0.430 | 0.016 | 0.024 | 0.068 | 0.002 | 0.003 | 0.0114 | 0.396 | 422 | 545 | 0.774 | 29.2 |
| GRADO 50 W12X6.5X26 L.40fts(12.2m) | CE183308 | 0.110 | 1.240 | 0.180 | 0.026 | 0.022 | 0.120 | 0.130 | 0.430 | 0.016 | 0.024 | 0.068 | 0.002 | 0.003 | 0.0114 | 0.396 | 426 | 552 | 0.772 | 29.9 |

-Product suitable for galvanizing: 0.14<=Si<=0.25 & P<=0.035.

-Intended use: construction and civil engineering.

-Durability: not determined.

-Regulated substances: not determined

JDM
 Castellbisbal, 30.06.2013
 Juan Diego Martínez Gálvez
 Quality Control Manager