

Technical Data Sheet

AMPCO[®] 18.23

Sand Castings

Nominal composition:

| | | |
|-----------|------|-----------|
| Aluminium | (Al) | 10.5% |
| Iron | (Fe) | 3.5% |
| Others | | max. 0.5% |
| Copper | (Cu) | balance |

| Mechanical and physical properties | Units | Nominal Values |
|--|--------------------------------|----------------|
| Tensile strength R_m | MPa | 724 |
| Yield strength $R_{p0.5}$ | MPa | 365 |
| Elongation A_5 | % | 14 |
| Brinell hardness | HBW 10/3000 | 202 |
| Rockwell hardness | HRB | 94 |
| Reduction of area ψ | % | 14 |
| Proportional limit R_p | MPa | 214 |
| Compressive strength R_{mc} | MPa | 1034 |
| Proportional limit in compression R_{pc} | MPa | 310 |
| Shear strength R_{cm} | MPa | 400 |
| Modulus of elasticity E | GPa | 110 |
| Charpy a_K | J | 13.6 |
| Izod a_K | J | 20 |
| Fatigue (100'000'000 cycles) σ_N | MPa | 234 |
| Density ρ | g / cm ³ | 7.45 |
| Coefficient of expansion α | 10 ⁻⁶ / K | 16.2 |
| Thermal conductivity λ | W / m · K | 59 |
| Electrical conductivity γ | m / Ω · mm ² | 7.5 |
| Electrical conductivity | % I.A.C.S. | 13 |
| Specific heat c_p | J / g · K | 0.42 |

Assurances given with respect to properties or uses are subject to written approval from AMPCO METAL.

This heat-treated alloy is the ultimate in high-strength bronzes requiring good bearing characteristics and exceptional wear resistance.

It has greater toughness than grade AMPCO[®] 18.22 and better physical properties than grades AMPCO[®] 18 or AMPCO[®] 18.136. Its exceptional proportional limit gives it a maximum resistance to distortion, enabling the designer to take full advantage of its high physical properties.

APPLICATIONS:

AMPCO[®] 18.23 gives a successful performance under heavy loads and impact conditions and makes it a preferred material for heavy-duty worm gears and similar applications.