Specifications

Previous AFNOR designation:
- AU4G1

European standards: EN AW-2024 [Al Cu4Mg1]

AECMA:
- Designation: AL-P2024

UNS: A92024

Mechanical Properties

- T4 condition thickness < 75 mm forged.
- Tensile test at ambient temperature (longitudinal direction).
  - UTS: > 420 N/mm²
  - 0.2 % Yield strength: > 260 N/mm²
  - Elongation (5d): > 8 %

Composition

Copper ......................................................4.4
Magnesium ..............................................1.5
Manganese ..............................................0.6
Aluminum ............................................Base

Applications

- Aerospace industry (structural parts and components of assemblies).
- Automotive industry.
- Mould tools for plastics processing.

Characteristics

- Where parts require significant levels of hot reduction, an alloy from series 7xxx is usually preferred.
HEAT TREATMENT

- Solution treatment 493°C.
- Water quench.
- Age to give the mechanical properties required.

PHYSICAL PROPERTIES

- Density: 2.77

- Modulus of elasticity in N/mm²:
  - at 20°C: 72.4 x 10⁶

- Mean coefficient of expansion in m/m.°C:
  - between (-50°C) and 20°C: 21.1 x 10⁻⁶
  - between 20°C and 100°C: 22.9 x 10⁻⁶
  - between 20°C and 200°C: 23.8 x 10⁻⁶
  - between 20°C and 300°C: 24.7 x 10⁻⁶

- Thermal conductivity in W.m/m².°C:
  - at 20°C: 120 (T4 condition)
  - at 20°C: 151 (T6 condition)

- Electrical resistivity in µΩ.cm²/cm:
  - at 20°C: 5.7 (T4 condition)
  - at 20°C: 4.5 (T6 condition)

- Electrical conductivity in S/m:
  - at 20°C: > 17.4 x 10⁶ (T4 condition)
  - at 20°C: > 22.0 x 10⁶ (T6 condition)