

Aluminium

Casting behavior:

- Wall thicknesses: > 2mm
- Tight tolerances usually only possible with mechanical processing

Reworking effort:

- High, removal of sprue system and burrs

Strength:

Low to high, depending on the alloy selected

Thermal behavior:

- Heat capacity High, approx. 2x higher than zinc, parts with heat dissipation/transfer function possible

Electrical conductivity:

- Low

Coating:

- Painting, structuring

Durability AL die casting tool:

- 3x to 4x lower than a zinc DG tool

Typical areas of application:

Automotive, mechanical engineering, pneumatics/hydraulics, drive technology, electrical engineering, electronics, household and kitchen appliances, sanitary technology, furniture and fittings industry, medical technology, toy industry

Mechanical properties AL

- EN AC-46000/GD-ALSi9Cu3
- R_m: 200-240 MPa
- R_e: 100-140 MPa
- E-modulus: 70 GPa (20°C)
- Creep rupture strength 108: 60-90 MPa
- Elongation at break: <1%
- Brinell hardness: HBS 500-10-30: 80R_m: 200-240 MPa

Physical properties:

- Linear expansion: 21µm/mK (20-200°C)
- Coefficient of thermal expansion: 21 10⁻⁶/K (20-200°C)
- Heat capacity: 900 J/KgK (20°C)
- Thermal conductivity: 120 W/mK
- Electrical conductivity: 13-17% IACS
- Liquidus / solidus temperature: 600 / - °C