

# Material Selection Guide

## Common CNC materials — properties, typical uses and machinability

A quick reference to the materials we machine most. Choose based on strength, corrosion resistance, weight, temperature and cost; we will confirm the optimal grade and temper during DFM review.

### Aluminum alloys

Grade	Key properties	Typical use	Machinability
6061-T6	Good strength, weldable, anodizes well, corrosion resistant	Brackets, housings, plates	Excellent
7075-T6	Very high strength-to-weight, not weldable	Aerospace structure	Good
5052	Excellent corrosion resistance, formable	Sheet, enclosures	Good
2024	High fatigue strength	Aircraft fittings	Good

### Stainless & steel

Grade	Key properties	Typical use	Machinability
303	Free-machining, lower corrosion resistance	Fittings, shafts (non-welded)	Excellent
304	General purpose, weldable, corrosion resistant	Enclosures, food-contact	Fair
316L	Superior corrosion resistance (chlorides)	Medical, marine, chemical	Fair
4140	High strength alloy steel, heat-treatable	Shafts, gears, tooling	Good

### Titanium, copper & plastics

Material	Key properties	Typical use
Ti-6Al-4V	High strength-to-weight, biocompatible, corrosion resistant	Aerospace, medical implants
C110 copper	Excellent thermal/electrical conductivity	Bus bars, heat sinks
Brass C360	Free-machining, good conductivity	Fittings, connectors
PEEK	High-temp engineering plastic, biocompatible	Medical, electrical insulators
Acetal (POM)	Low friction, dimensionally stable	Gears, bushings