2024 Aluminium Bar

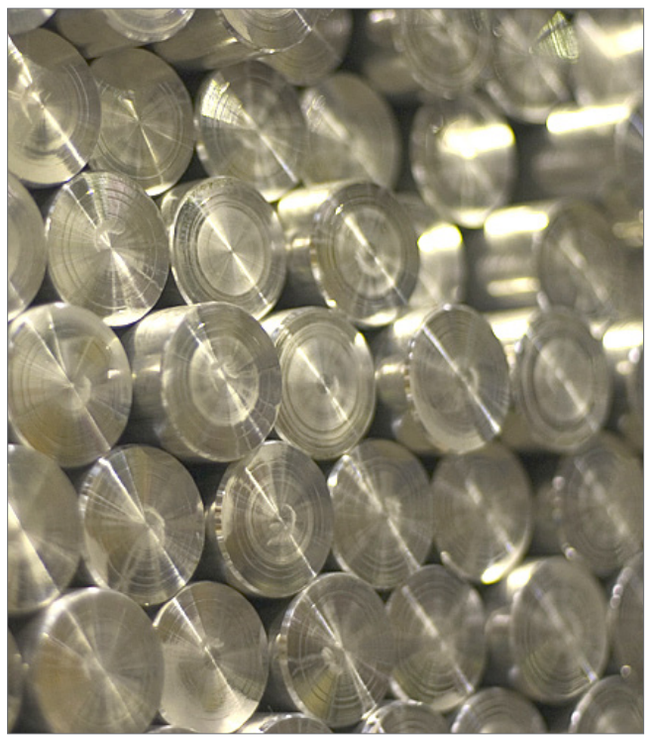
Smiths Advanced Metals

Heat-treatable Aluminium

2024 aluminium is a grade with high strength containing 3.8 to 4.9 % copper.

2024 aluminium alloy is a heat treatable material with both high strength and excellent fatigue resistance.

Workability is good and components can easily be machined to a high finish. Weldability is generally poor, although it can be flash spot or seam welded if necessary. 2024 is used in applications where a high strength/weight ratio is required. Bars are produced in drawn, rolled or cold-finished form. Smiths Advanced Metals stocks bars from grade 2024 in various shapes, sizes and tempers (including T3, T351, T3511, T4, T6 or T851 tempers).



Grades / Specifications

- 3.1254
- ABS5055
- AMS4120
- AMS4165
- AMS4339
- AMSQQA200/3
- AMSQQA225/6
- BS EN 573, BS EN 755, BS EN 754

Key Applications

- Aerospace components
- Critical aircraft structures
- Medical equipment
- High technology applications

Benefits

- Excellent fatigue resistance
- High strength
- Good machinability

Chemical Composition (weight %)

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others (ea)	Others (total)	Al
min.			3.80	0.30	1.20						Rem
max.	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	0.05	0.15	

Mechanical Properties (minimum values unless stated)

*Temper	MPa R_m	MPa $R_{p0,2}$	Elongation A (%)	Hardness HBW Typical
T3	425	290	9	120
T351	425	310	8	120
T6	425	315	5	125
T851	455	400	3	130

*T3 diameter 10mm < D ≤ 80mm. All other tempers ≤ 80mm diameter.

Properties as per BS EN 754-2

Physical Properties

Temper	T3	T4
Density (g/cm³)	2.77	2.77
Melting Range (°C)	500 - 640	500 - 640
Electrical Conductivity (20°C, % IACS)	30	30
Thermal Conductivity (% IACS)	38.4	38.4
Modulus of Elasticity (x10³, N/mm²)	73	73

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