

2024 Aluminium

Technical Datasheet



Service. Quality. Value.

High Strength Aluminium Alloy

Applications

- Aircraft fuselage
- Commercial & military aircraft
- Wing tension members
- Critical Aircraft structures

Product Description

Alloy 2024 is one of the more prominent aluminium alloys. Due to the alloys good fatigue resistance, especially in thick plate form, the material is specified for use in the aerospace and military sector in fuselage applications in such areas as structures and wing tension members. With improved fracture toughness and fatigue crack growth, Alloy 2024 continues to maintain strength characteristics. The alloy is available in T3, T4 and T8 tempers and in the annealed state.

Availability

Sheet, plate

Key features:

- Good fatigue resistance
- Good strength
- Excellent toughness at moderately high strength levels
- Improved fracture toughness

Corrosion Resistance

Resistance to atmospheric attack is poor.

Machinability

Good

Chemical Composition (weight %)

Weight (%)	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other
min.	Bal			3.80	0.30	1.20				
max.	Bal	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	0.05

Mechanical Properties

Temper	Thickness (mm)	Tensile Strength ksi (MPa)	Yield Strength ksi (MPa)	Elongation %
0-Sheet & plate	0.010-0.499 (0.25-12.44)	32.0 (max) (220)	14.0 (max) (96)	12
T3-Flat Sheet	0.008-0.249 (0.203-6.32)	63-64 (434-441)	42 (289)	10-15
T351-Plate*	0.250-4.000 (6.35-101.60)	64-57 (441-393)	42-41 (289-282)	12-4
T4-Coiled Sheet	0.010-0.125 (0.254-3.16)	62 (427)	40 (276)	12-15
T81-Flat Sheet	0.010-0.249 (0.254-6.32)	67 (462)	58 (400)	5
T851-Plate	0.250-1.499 (6.35-38.07)	67-66 (462-455)	58-57 (400-393)	5

* Strength decreases as thickness increases

UK Service Centres:

Smiths Belfast **02895 908 897**
Smiths Biggleswade **01767 604 704**
Smiths Birmingham **0121 728 4940**
Smiths Bristol **0117 971 2800**
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Main Office **0845 527 3331**

Quality & Testing:



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