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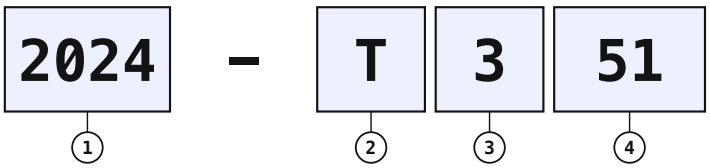
Guide to Aircraft Aluminum Alloys

Every aluminum alloy a sheet-metal shop or a stores clerk is likely to meet, side by side: what it is, how strong it is, whether it welds, and what it is for.

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

THE MARKING

ALLOY NUMBER, THEN TEMPER



SERIES

FIRST DIGIT: MAIN ALLOYING ELEMENT

SERIES	ELEMENT	EXAMPLES
1xxx	Aluminum, 99 % or more	1100
2xxx	Copper	2024, 2219
3xxx	Manganese	3003
5xxx	Magnesium	5052, 5086
6xxx	Magnesium and silicon	6061, 6063
7xxx	Zinc	7075, 7050

BASIC TEMPER LETTERS

AC 43.13-1B TABLE 4-4

LETTER	MEANING
F	As fabricated. No property limits
O	Annealed: the softest temper
H	Strain-hardened (non heat-treatable)
T	Heat-treated to a stable temper

PARTS LIST

#	WHAT IT SAYS
1	Alloy number: the composition
2	T: heat-treated
3	3: solution treated, cold-worked
4	51: stretched 1 to 3 % set

NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on AC 43.13-1B Table 4-4, AA Teal Sheets.

REVISIONS

REV	DESCRIPTION	DATE
A	First issue	2026-10-30

The Aviation Point. Structural repair reference

TITLE: **Aluminum alloy and temper code**

DRAWING NO.	REV	SCALE	SHEET
TAP-DWG-047	A	NTS	1 OF 1

APPLIES TO: Wrought aluminum alloys

DO NOT SCALE DRAWING

Temper meanings from AC 43.13-1B Table 4-4. Full list: aluminum temper chart.

Aircraft aluminum alloys side by side

Alloy	Group	Ftu, ksi	Fty, ksi	lb/in³	Arc weld	Mostly for
2024-T3 sheet	2xxx HT	64	47	0.100	C	Skins, doublers, general structure
Alclad 2024-T3	2xxx HT	62	45	0.100	C	Skins that must resist corrosion
2024-T351 plate	2xxx HT	64	48	0.100	C	Plate, machined parts
2014-T6 sheet	2xxx HT	67	59	0.101	B	Forgings, fittings, heavy parts
2017 bar, rod	2xxx HT	55 (S)	32 (S)	0.101	C	D rivets, fasteners
2117	2xxx HT	—	—	0.099	—	AD rivets
2219-T81 sheet	2xxx HT	61	47	0.103	A	Weldable tanks, hot parts
6061-T6 sheet	6xxx HT	42	36	0.098	A	Tubing, brackets, weldments
6063	6xxx HT	—	—	0.097	—	Extrusions, not in FAA sources
7075-T6 sheet	7xxx HT	78	70	0.101	C	Fittings, high-tension parts
Alclad 7075-T6	7xxx HT	74	66	0.101	C	High-strength clad sheet
7075-O	7xxx HT	—	—	0.101	C	Form, then heat-treat
7050-T7451 plate	7xxx HT	74 (S)	64 (S)	0.102	C	Thick plate, E rivets
7178	7xxx HT	—	—	0.102	—	Older aircraft
1100	1xxx	—	—	0.098	—	Tanks, cowlings, soft rivets
3003	3xxx	—	—	0.099	—	Tanks, cowlings, tubing
5052-H32	5xxx	31 (S)	23 (S)	0.097	A	Lines, tanks, formed parts
5086-H32	5xxx	40	28	0.096	A	Tough, weldable plate
5056	5xxx	—	—	0.095	—	Rivets for magnesium

Key points

- **The SRM or drawing names the material.** This guide narrows the question: it does not answer it.

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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- **Cancelled source.** MIL-HDBK-5J is superseded by MMPDS.
- **Thickness matters.** Values in the table are for one range only.

SOURCES · FAA AC 43.13-1B CHG 1, Chapters 4 and 7 · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 4 · MIL-HDBK-5J, Chapter 3 · Aluminum Association, International Alloy Designations, rev. Aug 2018 · MMPDS

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