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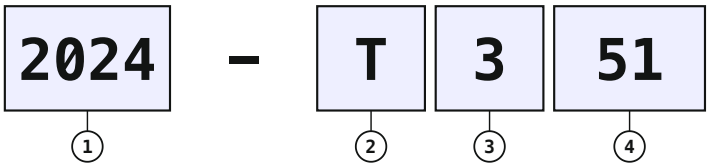
7050 Aluminum

The thick-section alloy.

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.

Key facts

Property	Value	Source
Density	0.102 lb/in³ (2.83 g/cm³)	MIL-HDBK-5J; Teal Sheets
E / Ec / G	10.3 / 10.6 / 3.9 × 10³ ksi	MIL-HDBK-5J Table 3.7.4.0(b1)
Arc / spot welding	C / B	MIL-HDBK-5J Table 3.1.3.4(a)
Stress corrosion, T74 plate	L: A · LT: A · ST: B	MIL-HDBK-5J Table 3.1.2.3.1(a)
Stress corrosion, T76 plate	L: A · LT: A · ST: C	MIL-HDBK-5J Table 3.1.2.3.1(a)
Rivet shear, driven 7050-T731	43 ksi	MIL-HDBK-5J Table 8.1.2(b)

Composition limits, weight percent

Element	Limit
Si	0.12
Fe	0.15
Cu	2.0–2.6
Mn	0.10
Mg	1.9–2.6
Cr	0.04
Zn	5.7–6.7
Ti	0.06
Zr	0.08–0.15
Al	Remainder

Design allowables, 7050-T7451 plate

Property, ksi	0.250-1.500 A	0.250-1.500 B	3.001-4.000 A	3.001-4.000 B	7.001-8.000 A	7.001-8.000 B
Ftu, L	74 (S)	76	72	74	68	71

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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Property, ksi	0.250–1.500 A	0.250–1.500 B	3.001–4.000 A	3.001–4.000 B	7.001–8.000 A	7.001–8.000 B
Ftu, LT	74	76	72	75	68	71
Fty, L	64 (S)	67	62 (S)	65	58 (S)	63
Fty, LT	64	66	62	65	58	61
Fcy, L	63	64	60	63	55	57
Fcy, LT	66	68	65	68	59	62
Fsu	42	43	43	45	44	46
Fbru, e/D = 1.5	107	110	107	111	103	108
Fbru, e/D = 2.0	140	144	140	144	132	138
Fbry, e/D = 1.5	86	89	90	94	83	87
Fbry, e/D = 2.0	101	104	104	109	98	102

Specifications and product forms

Specification	Form
AMS 4050, AMS 4201	Bare plate
AMS 4107, AMS 4333	Die forging
AMS 4108	Hand forging
AMS 4340, AMS 4341, AMS 4342	Extruded shape
AMS-A-22771	Forging

Key points

- **Not a source of design allowables.** Values are for reference. MMPDS and the SRM govern a repair.
- **Not a substitution approval.** A different alloy or temper needs approved data.

SOURCES · 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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