THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM

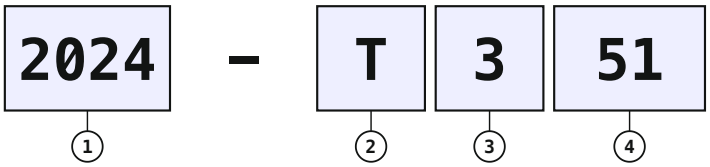
2014 Aluminum

A heavy-duty aluminum-copper alloy for forgings, plate, extrusions and fittings.

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	0.101 lb/in³ (2.80 g/cm³)	MIL-HDBK-5J; Teal Sheets
Brinell hardness, O / T6	45 / 135	AC 43.13-1B Table 4-5
Arc / spot welding, T6	B / B	MIL-HDBK-5J Table 3.1.3.4(a)
Arc / spot welding, O	C / D	MIL-HDBK-5J Table 3.1.3.4(a)
Stress corrosion, 2014-T6	ST: D in all forms	MIL-HDBK-5J Table 3.1.2.3.1(a)

Composition limits, weight percent

Element	Limit
Si	0.50-1.2
Fe	0.7
Cu	3.9-5.0
Mn	0.40-1.2
Mg	0.20-0.8
Cr	0.10
Zn	0.25
Ti	0.15
Al	Remainder

Design allowables, 2014-T6 sheet, bare and clad, 0.040-0.249 in

Property, ksi	Bare A	Bare B	Clad A	Clad B
Ftu, L	67	68	65	67
Ftu, LT	66	67	64	66
Fty, L	59	60	57	59

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

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM

THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM

Property, ksi	Bare A	Bare B	Clad A	Clad B
Fty, LT	58	59	56	58
Fcy, L	59	60	57	59
Fcy, LT	60	61	58	60
Fsu	40	41	39	40
Fbru, e/D = 1.5	100	102	97	100
Fbru, e/D = 2.0	127	129	123	127
Fbry, e/D = 1.5	83	84	80	83
Fbry, e/D = 2.0	94	96	91	94

Specifications and product forms

Specification	Form
AMS 4028, AMS 4029	Bare sheet and plate
AMS-QQ-A-250/3	Clad sheet and plate
AMS 4121, AMS-QQ-A-225/4	Bar and rod
AMS 4153, AMS-QQ-A-200/2	Extrusion
AMS-A-22771, AMS-QQ-A-367, AMS 4133	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.
- **Not for sustained tension across the grain.** See the D rating above.

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

SCAN · OPEN THIS GUIDE
theaviationpoint.com/materials/aluminum/2014/

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