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

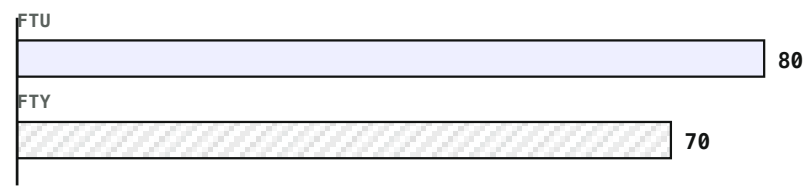
CP Titanium Grade 4

The strongest unalloyed titanium: 80 ksi minimum tensile, with the least ductility of the four.

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

CP TITANIUM GRADE 4

ANNEALED SHEET, AMS 4901 AND AMS-T-9046 (CP-1) · KSI



PARTS LIST

#	ITEM	NOTE	SRC
1	Sheet, plate	AMS 4901	HDBK-5J
2	Elongation	15 %	HDBK-5J
3	Anneal	1000-1300 F	HDBK-5J
4	Density	0.163 lb/in3	HDBK-5J

READ BEFORE USE

ANNEALED, S BASIS
RE-ANNEAL AFTER SEVERE FORMING
NO CHLORINATED SOLVENTS

NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on MIL-HDBK-5J, AC 43.13-1B.

REVISIONS

REV	DESCRIPTION	DATE
A	First issue	2026-10-30

The Aviation Point. Structural repair reference

TITLE			
CP Grade 4			
DRAWING NO. TAP-DWG-083	REV A	SCALE NTS	SHEET 1 OF 1
APPLIES TO Aircraft materials			

DO NOT SCALE DRAWING

CP titanium Grade 4: annealed sheet, AMS 4901 and AMS-T-9046 (CP-1) Values from MIL-HDBK-5J, S basis unless noted.

Key facts

Property	Value	Source
Type	Unalloyed titanium, annealed; excellent formability, readily welded or brazed	MIL-HDBK-5J, par. 5.2.1.0
MIL-HDBK-5J name	CP-1 under AMS-T-9046, equal in strength to ASTM Grade 4	MIL-HDBK-5J, Table 5.2.1.0(b); ASTM B265 grade strengths
Specification	AMS 4901 and AMS-T-9046 (CP-1)	MIL-HDBK-5J, Table 5.2.1.0(a)
Oxygen limit	0.40 % max (interstitials set the grade)	ASTM B265-10 Table 2 (Grade 4)
Full anneal	1,000 to 1,300 °F for 10 to 30 minutes	MIL-HDBK-5J, par. 5.2.1.0
Stress relief	900 to 1,000 °F for 30 minutes	MIL-HDBK-5J, par. 5.2.1.0
Density	0.163 lb/in³ (about 4.51 g/cm³, converted)	MIL-HDBK-5J, Table 5.2.1.0(b)

Design allowables — CP titanium Grade 4 sheet, strip and plate, annealed

Property	S basis	Unit
Ftu, L and LT	80	ksi
Fty, L and LT	70	ksi
Elongation, L and LT (0.025 in and over)	15	%
E	15.5	10^3 ksi
G	6.5	10^3 ksi
Density	0.163	lb/in³

Key points

- **Annealed values.** Forming and heat change them.
- **Not a substitute for an alloy grade** or for aluminum; the drawing names the grade.

SOURCES · FAA AC 43.13-1B CHG 1 · FAA-H-8083-31B, Aviation Maintenance Technician Handbook, Airframe, Volume 1 · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · FAA AC 43.13-1B CHG 1 · MMPDS · ASTM B265, Titanium and Titanium Alloy Strip, Sheet, and Plate

SCAN · OPEN THIS GUIDE
theaviationpoint.com/materials/titanium/cp-grade-4/

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