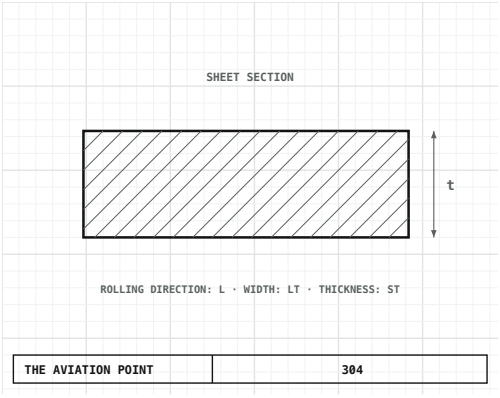
THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM · THE AVIATION POINT · THEAVIATIONPOINT.COM

304 — austenitic stainless steel

The everyday 18-8 stainless.



Schematic

Designation

Item	Value
Designation	304
Class	Steel and stainless
Type	austenitic stainless steel

Composition

Item	Limit	Source
Composition	Chromium 17.5-19.5 %, nickel 8.0-10.5 %, carbon up to 0.07 %	ASTM A240/A240M Table 1 (UNS S30400)

Properties

Property	Value	Source
Specs by temper	AMS 5513 annealed, 5910 ¼ H, 5911 ½ H, 5912 ¾ H, 5913 full hard	MIL-HDBK-5J, Table 2.7.1.0(b) footnote b
Allowables	The 301 table applies for those specifications	MIL-HDBK-5J, Table 2.7.1.0(b) footnote b
Welding rod	308L, AWS A5.9	AC 43.13-1B CHG 1, Table 4-15
Class	Austenitic, nonmagnetic, 300 series	AC 43.13-1B par. 6-164b

Design allowables — sheet and strip by temper (properties of AISI 301 table, applicable to 304)

Temper	Specification	Ftu L / LT, ksi	Fty L / LT, ksi	Fsu, ksi	Basis
Annealed	AMS 5513	73 / 75	26 / 30	50	S
¼ hard	AMS 5910	124 / 122	69 / 67	66	A
½ hard	AMS 5911	141 / 142	93 / 92	77	A
¾ hard	AMS 5912	157 / 163	118 / 113	88	A
Full hard	AMS 5913	174 / 175	137 / 125	95	A

Properties of the 300-series alloys that the handbook ties to Table 2.7.1.0(b) by footnote. Fsu and Ftu: Table 2.7.1.0(b), p. 2-223; E 29.0 × 10^3 ksi annealed (L and LT), falling to 26-28 ksi × 10^3 in the hard tempers; density 0.286 lb/in^3. Cold-worked tempers lose strength above 900 °F. Yield, particularly in compression, and longitudinal modulus can be raised appreciably by stress relieving at 500 to 800 °F. MIL-HDBK-5J (2003) is superseded by MMPDS.

Notes

- **Values come from the 301 table** by footnote.
- **Not for firewalls or hot parts by default.** Those call for the alloy on the drawing (321, 347, 301).

SOURCES · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · FAA AC 43.13-1B CHG 1 · FAA-H-8083-31B, Aviation Maintenance Technician Handbook, Airframe, Volume 1 · MMPDS · ASTM A240/A240M, Plate, Sheet, and Strip of Chromium and Chromium-Nickel Stainless Steel

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/materials/304/

Reference data. The aircraft manufacturer's documentation (SRM / IPC) takes precedence.

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