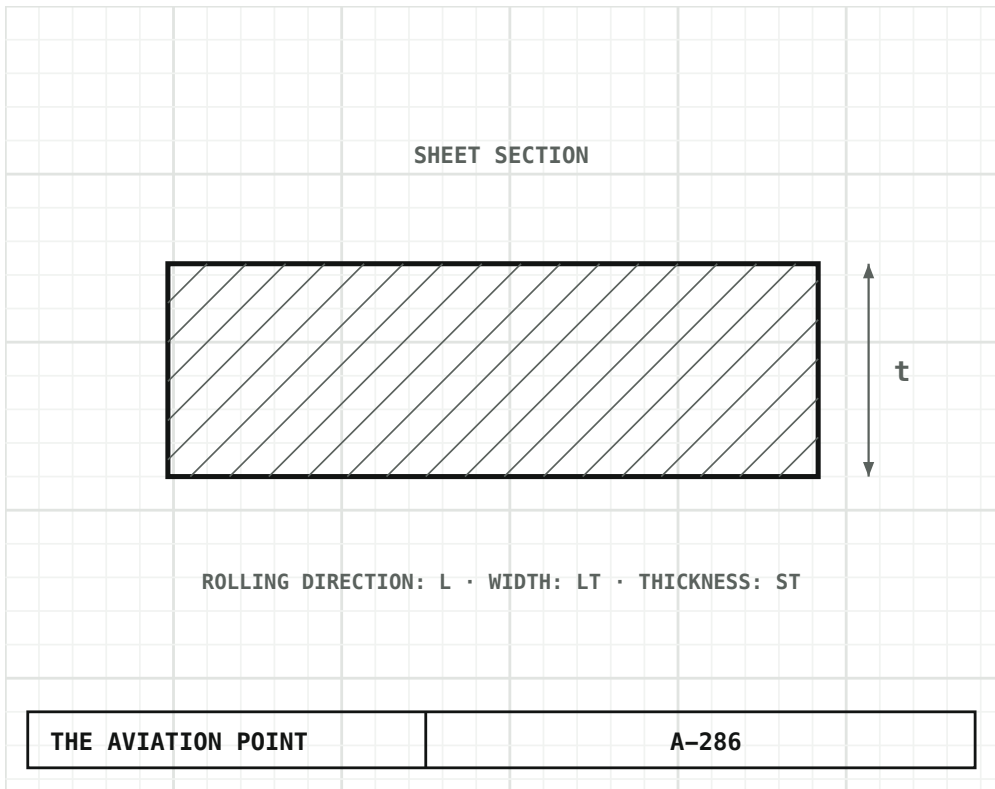
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A-286 — iron-base superalloy

Stainless-like, but a precipitation-hardened superalloy: strong to 1,300 °F.



Schematic

Designation

Item	Value
Designation	A-286
Class	Steel and stainless
Type	iron-base superalloy

Composition

Item	Limit	Source
Composition	Iron base, nickel 24–27 %, chromium 13.5–16 %, molybdenum 1.0–1.5 %, titanium 1.9–2.35 %, vanadium 0.1–0.5 %	ATI A286 alloy page, chemical composition (AMS 5525)

Properties

Property	Value	Source
Type	Precipitation-hardening iron-base alloy	MIL-HDBK-5J, par. 6.2.1.0
Temperature	High strength to 1,300 °F; oxidation resistance to 1,500 °F	MIL-HDBK-5J, par. 6.2.1.0
Sheet, strip, plate	AMS 5525, solution treated (1,800 °F) and aged	MIL-HDBK-5J, Table 6.2.1.0(a)
Bar, forging, tubing	AMS 5731, 5732, 5734, 5737	MIL-HDBK-5J, Table 6.2.1.0(a)
Compared with stainless	Somewhat harder to hot or cold work than the austenitic stainless steels	MIL-HDBK-5J, par. 6.2.1.0

Design allowables — A-286 sheet, strip and plate, solution treated and aged

Property	S basis	Unit
Ftu, LT	140	ksi
Fty, LT	95	ksi
Fcy, LT	95	ksi
Fsu	91	ksi
Elongation, LT	15	%
E	29.1	10^3 ksi
G	11.1	10^3 ksi
Density	0.287	lb/in^3

Bars (AMS 5731, 5732, 5734, 5737) have their own columns by diameter in the same table: Ftu 130–140 ksi, Fty 85–95 ksi.

Notes

- **Hot-section material.** Specified by the engine or airframe maker.
- **Heavier forming loads** than stainless.

SOURCES · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · MMPDS · ATI, A286 alloy

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/materials/a-286/

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