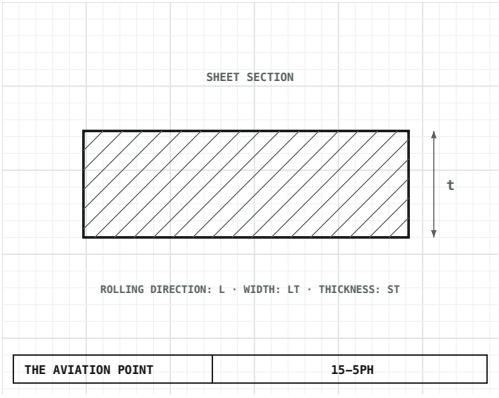
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15-5PH — precipitation-hardening stainless steel

17-4PH with better transverse ductility and cleaner structure in big sections.



Schematic

Designation

Item	Value
Designation	15-5PH
Class	Steel and stainless
Type	precipitation-hardening stainless steel

Composition

Item	Limit	Source
Composition	Chromium 14.0–15.5 %, nickel 3.5–5.5 %, copper 2.5–4.5 %, niobium plus tantalum 0.15–0.45 %, carbon 0.07 % max	Metal supplier's 15-5 PH datasheet, chemical composition (AMS 5659 / AMS 5862)

Properties

Property	Value	Source
Use	Parts needing corrosion resistance and high strength to 600 °F; good transverse ductility and strength in large sections	MIL-HDBK-5J, par. 2.6.7.0
Bar	AMS 5659	MIL-HDBK-5J, Table 2.6.7.0(b)
Plate	AMS 5862, H1025	MIL-HDBK-5J, Table 2.6.7.0(c)
Never	Use in Condition A; use H900 or H925 where good fracture toughness or impact is required	MIL-HDBK-5J, par. 2.6.7.0
Best notch toughness	H1150M, recommended for cryogenic use	MIL-HDBK-5J, par. 2.6.7.0

Design allowables — 15-5PH bar (AMS 5659) by condition, S basis

Condition	Ftu	Fty	Elongation L, %	Elongation T, %
H900	190	170	10	6
H925	170	155	10	7
H1025	155	145	12	8
H1075	145	125	13	9
H1100	140	115	14	10
H1150	135	105	16	11

Plate (AMS 5862), H1025, 0.187–0.625 in: Ftu 155 (LT), Fty 145, Fcy 150–152, Fsu 97, elongation 8 percent (Table 2.6.7.0(c), p. 2-170). E = 28.5 × 10^3 ksi, G = 11.2 × 10^3 ksi, density 0.283 lb/in^3.

Notes

- **Never Condition A in service.**
- **H900/H925 and toughness don't mix.**

SOURCES · MIL-HDBK-5J, Metallic Materials and Elements for Aerospace Vehicle Structures · FAA AC 43.13-1B CHG 1 · MMPDS · Metal supplier's 15-5 PH datasheet

SCAN · OPEN THIS DATA SHEET
theaviationpoint.com/parts/materials/15-5ph/

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

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