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Aircraft steels and stainless steels: which one for which job

Pick the grade by the job, then open its page for composition, strength and forms.

Steels, stainless and nickel alloys

Material	What it is for
Inconel 625	Inconel 625 sheet for aircraft: annealed 120 ksi Ftu design values, AMS 5599, corrosion and oxidation to 1,800
Inconel 718	Inconel 718 for aircraft: 180 ksi solution-treated-and-aged sheet, AMS 5596, 5597 and 5589, welding, forming,
15-5PH Stainless Steel	15-5PH stainless for aircraft: H900 to H1150M, AMS 5659 bar and AMS 5862 plate, transverse toughness, welding
17-4PH Stainless Steel	17-4PH stainless for aircraft: H900 to H1150 conditions, strength 135–190 ksi, AMS 5604 sheet and 5643 bar, we
17-7PH Stainless Steel	17-7PH semiaustenitic stainless sheet for aircraft: form in Condition A, harden to TH1050, AMS 5528, 177 ksi d
301 Stainless Steel	301 stainless steel sheet for aircraft: strength by temper from annealed to full hard, AMS 5901-5519, firewall
302 Stainless Steel	302 (18-8) stainless steel for aircraft: composition, AMS 5516 and 5903–5906 by temper, welding, corrosion, an
304 Stainless Steel	304 stainless steel for aircraft: AMS 5513 and 5910–5913 by temper, strength from the 301 table, 308L filler,
316 Stainless Steel	316 stainless steel for aircraft: molybdenum-bearing austenitic, AMS 5524 and 5907, 316L filler, strength from
321 Stainless Steel	321 titanium-stabilized stainless steel for aircraft: composition, AMS 5510 sheet, exhaust-heat use, welding a
347 Stainless Steel	347 niobium-stabilized stainless steel for aircraft: composition, AMS 5512 sheet, high-temperature use, weld f
4140 Steel	4140 chromium-molybdenum steel for aircraft: how it differs from 4130, AMS specs, forms, why it is harder to w
4340 Steel	4340 nickel-chromium-molybdenum steel: 260 ksi vacuum-melted design values, AMS 6414, temper embrittlement, an
8740 Steel	8740 nickel-chromium-molybdenum steel for aircraft: the alternate to 4140, AMS 6322 and 6323 specs, 125 ksi ba
A-286 Alloy	A-286 iron-base alloy for aircraft: AMS 5525 sheet, solution treated and aged, 140 ksi, strength to 1,300 °F,
H-11 Tool Steel (5Cr-Mo-V)	H-11 / 5Cr-Mo-V aircraft steel: strength to 1,000 °F, AMS 6437 sheet and AMS 6487/6488 bar, 240–280 ksi design
4130 Steel	4130 chromium-molybdenum steel for aircraft: composition, density, tubing specs, TIG welding rules for thin wa

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

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