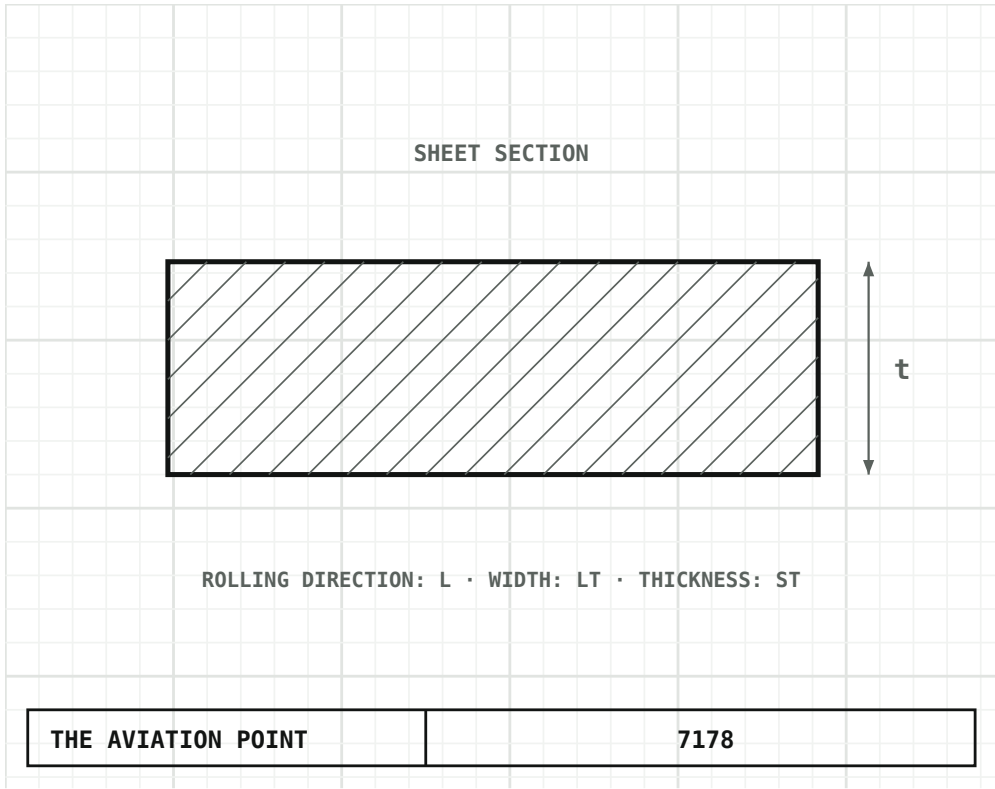
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7178 — wrought aluminum alloy

An older high-strength alloy with more zinc and copper than 7075.



Schematic

Designation

Item	Value
Designation	7178
Class	Aluminum
Type	wrought aluminum alloy

Composition

Element	Limit
Si	0.40
Fe	0.50
Cu	1.6–2.4
Mn	0.30
Mg	2.4–3.1
Cr	0.18–0.28
Zn	6.3–7.3
Ti	0.20
Al	Remainder

A single number is a maximum. Other elements: 0.05 each, 0.15 total, except where the Teal Sheets say otherwise. Source: Aluminum Association Teal Sheets (Aug 2018).

Properties

Property	Value	Source
Density	0.102 lb/in³ (2.83 g/cm³)	Teal Sheets
Allowables	None in Section 3.7	MIL-HDBK-5J Table 3.1.1
Named in	Comparison with 7050 T76 in stress corrosion	MIL-HDBK-5J 3.7.4.0
Bend radius, 7178-O	See table below	FAA-H-8083-31B Chart 204
Replacement	7178-T6 and clad are in a substitution figure	FAA-H-8083-31B Figure 4-168

No strength value is given here because none of the sources used by this site prints one.

Minimum bend radius, inches (AMT Handbook Chart 204)

Alloy and temper	0.020"	0.032"	0.040"	0.063"	0.125"	0.190"
7178-O, 2024-O, 5052-H34, 6061-T4, 7075-O	.03	.03	.06	.09	.25	.38

Selected thicknesses from FAA-H-8083-31B Chart 204, p. 4-61. Chart 204 and AC Table 4-6 do not agree everywhere: where they differ, use the larger radius or the SRM.

Notes

- **Not a source of design allowables.** Values are for reference. MMPDS and the SRM govern a repair.
- **Not a substitution approval.** A different alloy or temper needs approved data.

SOURCES · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 4 · MIL-HDBK-5J, Chapter 3 · Aluminum Association, International Alloy Designations, rev. Aug 2018 · MMPDS

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