

Aluminium alloy selection table

Five alloys, the temper that goes with each, and the sign application it suits. Temper is part of the specification:
5052-H32 is a different material from 5052-H38.

ALLOY / TEMPER	TENSILE	YIELD	CORROSION	FORMABILITY	USE
1060-H14 / H24	≈85 MPa	≈75 MPa	Good	Excellent	Low-cost flat panel, temporary and low-grade roads
3003-H14	≈150 MPa	≈145 MPa	Good	Very good	General sign blanks — the workhorse grade
3004-H32	≈215 MPa	≈180 MPa	Good	Good	Large panels and high wind load
5A02 / 5052-H38	≈270 MPa	≈215 MPa	Very good (marine)	Fair	Gulf specifications, Ø750 mm and above
6061-T6	≈290 MPa	≈240 MPa	Good	Poor	Brackets, gantries, machined hardware — not face panels

Stiffness does not change with alloy. Every 3000- and 5000-series alloy has an elastic modulus of about 69 GPa. Going from 2.0 mm to 2.5 mm raises stiffness by roughly 95%; going from 3003 to 5052 raises it by nothing. Fix the wind load, choose the thickness that satisfies deflection, then choose the alloy for strength, corrosion and the buyer’s specification.

Values are typical handbook figures for the temper, not a mill certificate. 5A02 is the Chinese designation for the 5052 family — quote both, or an overseas fabricator will not recognise the drawing.