

Condition-Dependent Mechanical Properties of AISI 4130 Alloy Steel

This table organizes representative AISI 4130 mechanical-property data by supplied condition, product form, and section range for cleaner technical comparison.

Product form / reference	Supply condition	Section / thickness	Tensile strength	Yield strength	Elongation	Hardness / note	Technical reading
General AISI 4130 datasheet value	General reference state	-	560 MPa (81.2 ksi)	460 MPa (66.7 ksi)	21.5%	217 HB	Useful as a broad baseline for the grade, but not a substitute for condition-specific data.
Tube, AMS 6371	Cold drawn	Tube	95 ksi (655 MPa)	70 ksi (483 MPa)	12%	<25 HRC	Shows the higher strength typical of cold-drawn tube with reduced elongation compared with a softer supplied condition.
Bar, AMS 6346	Hardened and tempered	Bar	125 ksi (862 MPa)	100 ksi (690 MPa)	17%	-	Illustrates how heat-treated bar can be pushed to a substantially higher strength level than general reference data.
Sheet, AMS 6345	Normalized	Under 0.062 in	95 ksi (655 MPa)	75 ksi (517 MPa)	8%	-	Thin normalized sheet is held at a high strength level, but with lower elongation than thicker sections.
Sheet, AMS 6345	Normalized	0.062-0.125 in	95 ksi (655 MPa)	75 ksi (517 MPa)	10%	-	Same strength level as thinner sheet, with slightly improved ductility.
Sheet, AMS 6345	Normalized	0.125-0.187 in	95 ksi (655 MPa)	75 ksi (517 MPa)	12%	-	Ductility increases further as section thickness moves upward within the normalized sheet range.
Sheet, AMS 6345	Normalized	0.187-0.250 in	90 ksi (621 MPa)	70 ksi (483 MPa)	15%	-	Thicker normalized sheet shows a lower specified strength level, but a more favorable elongation figure.
Hobart reference	Annealed	General supplied condition	~90 ksi	-	-	Approximate supplied-condition reference	Useful for showing the softer baseline expected before higher-strength treatment routes are applied.
Hobart reference	Normalized	General supplied condition	~100 ksi	-	-	Approximate supplied-condition reference	Indicates the typical step up from annealed to normalized condition.
Hobart reference	Quenched and tempered	General supplied condition	~100-200 ksi	-	-	Broad range; strongly condition-dependent	Demonstrates how widely the final strength can vary once quench-and-temper practice, section size, and target property level are introduced.