



4130 AIRCRAFT TUBING

4130 is a through-hardening, chromium-molybdenum alloy tubing used extensively in the aircraft, and anywhere light strong structural tubing is needed. It is resistant to oxidation and scaling and has smooth, clean interior and exterior surfaces. 4130 is produced by the cold drawn seamless process from electric-furnace processed steel. Applications: The weldability of 4130 is excellent, and therefore it finds popular utilization in aircraft type construction where welding is a requirement. Specifications: MIL-T-6736, AMS -6360 Revision (Magnaflux Quality) UNS G41330. 4130 "seamless" tubing (MIL-T-6736) is interchangeable with 4130 "welded" tubing (MIL-T-6731). MECHANICAL PROPERTIES

MECHANICAL PROPERTIES CONDITION "N" NORMALIZED

	Minimum Tensile Strength (psi)	Minimum Yield Strength (psi)	Elongation % in 2"	
			Tube	Strip
Up to .035 Inc.	95,000	75,000	10	5
Over .035 to .188 Inc.	95,000	75,000	12	7
Over .188	90,000	70,000	15	10
Condition HT-125	125,000	100,000	12	7

OUTSIDE DIAMETER TOLERANCES

Outside Diameter	Condition (A) & (N)	Quenched & Tempered	Wall Tolerance
3/16 od to under 1/2 od	+/- .004	+/- .010	+/- 15"
1/2 od to under 1-1/2 od	+/- .005	+/- .015	+/- 10%
1-1/2 od to 3-1/2 od Inc.	+/- .010	+/- .030	+/-10%

MECHANICAL PROPERTIES CONDITION "F" HARDENED & TEMPERED

	Tensile Strength psi	Yield Strength psi	Elongation in 2"	Reduction of AREA
Condition F	125,000 min.	100,000 min	17% min.	55% min.

ELEMENT ANALYSIS

Carbon	Manganese	Phosphorus	Sulphur	Silicon	Chromium	Nickel	Molybdenum
.28/.33	.40/.60	.025 max.	.025 max.	.15/.35	.80/1.10	.25 max.	15/.25

Heat Treatment
 Normalize - 1600°/1700°F
 Austenitize - 1500°/1600°F
 Quench - Oil
 Temper - 700°/1250°F

Color Marking
 Normalized bars - ends painted pink
 Heat Treated bars - ends painted white
 Unannealed billets - ends painted pink

HARDENABILITY: As required by MIL-S-6758, minimum end-quench hardenability values for grade are Rockwell "C" 35 at 5/16" and Rockwell "C" at 8/16".