

Aluminum Bronze C61400 — Material Data Sheet

ASTM F468 / F467 fasteners · ASTM B150 rod and bar · UNS C61400 · Aluminum bronze D (Alloy 614, 7 % Al – 2.5 % Fe)
Single-phase iron-bearing aluminum bronze with high strength and seawater resistance

The 7 percent aluminum bronze — 75 to 110 ksi as a fastener, weldable, and resistant to seawater, brine and dilute acids.

TENSILE, F468 FULL SIZE	75–110 ksi	NUT PROOF STRESS, F467	75 ksi hex · 81 heavy hex
YIELD, F468	35 ksi min	ALUMINUM	6.0–8.0 %
HARDNESS, F468	70–95 HRB	MAGNETIC	Slightly (iron content)

Nominal composition



■ Cu balance ~ 89.9% ■ Al ~ 7.00% ■ Fe ~ 2.50% ■ Mn ~ 0.50% ■ Zn, Pb, P trace

Midpoints of the specification ranges, for orientation only. Limits are in the table.

Chemical composition — C61400 per ASTM B150 Table 1

Element	Symbol	Min %	Max %
Copper	Cu	balance	—
Aluminum	Al	6.0	8.0
Iron	Fe	1.5	3.5
Manganese	Mn	—	1.0
Zinc	Zn	—	0.20
Lead	Pb	—	0.01
Phosphorus	P	—	0.015

Values per ASTM B150/B150M-19 Table 1 (verified against the specification). Confirm the edition called out on your purchase order with our estimating team.

Physical properties (typical)

DENSITY	0.285 lb/in ³
MAGNETIC	Slightly, from the iron content
SPARKING	Non-sparking

Heat treatment

Not hardenable by heat treatment. Supplied drawn and stress relieved (HR50) or annealed.

Fastener mechanical properties per ASTM F468 Table 2 (marking F468G)

Nominal diameter (in.)	Hardness	Full-size tensile (ksi)	Full-size yield, min (ksi)	Machined tensile, min (ksi)	Machined yield, min (ksi)	Elongation in 4D, min (%)
All sizes	70–95 HRB	75–110	35	75	35	30

Values per ASTM F468-23 Table 2 (verified against the specification). Confirm the edition called out on your purchase order with our estimating team. Full-size tensile range and yield; machined-specimen minimums in the last three columns.

Nut requirements per ASTM F467 Table 2 (marking F467G)

Nut style	Hardness, min	Proof stress, min (ksi)
Hex and hex flange	70 HRB	75
Heavy hex, large hex flange and thick	70 HRB	81

Values per ASTM F467-24 Table 2 (verified against the specification). Confirm the edition called out on your purchase order with our estimating team.

Bar and rod properties per ASTM B150 Table 2 (C61400 round rod, HR50 drawn and stress relieved)

Temper and size (in.)	Tensile strength, min (ksi)	Yield strength at 0.5 % extension, min (ksi)	Elongation, min (%)
HR50 — ½ and under	80	40	30
HR50 — over ½ to 1	75	35	30
HR50 — over 1 to 2	70	32	30
HR50 — over 2 to 3	70	30	30

Values per ASTM B150/B150M-19 Table 2 (verified against the specification). Confirm the edition called out on your purchase order with our estimating team.

Applicable standards

ASTM F468 / F468M	Nonferrous bolts, cap screws and studs (Cu 614, F468G)
ASTM F467 / F467M	Nonferrous nuts (Cu 614, F467G)
ASTM B150 / B150M	Aluminum bronze rod, bar and shapes
ASTM B169	Aluminum bronze plate, sheet and strip

Forms we supply in C61400 Aluminum Bronze

- Hex bolts, studs and cap screws to F468
- Hex and heavy hex nuts to F467
- Tube-sheet, pump and valve components machined to print
- Certified B150 rod

Typical applications

- Condenser and heat-exchanger tube sheets and bolting
- Seawater piping and pump components
- Acid-pickling and chemical process equipment
- Weldable bronze structures and fittings