

HIGH RATIO EXTRUDED ALUMINUM ALLOY

Alloy C57B, is a 6xxx alloy that has been slightly modified to improve extrudability of difficult extruded profiles, particularly heatsinks and thin wall hollows. For complex solid, semi-hollow, or hollow shapes, C57B alloy provides a new level of design flexibility. Also due to the lower magnesium content, C57B alloy is also more suitable than 6063 alloys for brazing applications.

Mechanical Properties

	Ultimate Tensile Strength (ksi)	Tensile Yield Strength (ksi)	Elongation (%)
C57B – T5 , thickness up thru 0.500 inches			
Minimum	22.0	16.0	8
Typical	30.9	27.2	13.5
6063 – T5 , thickness up thru 0.500 inches			
Minimum	22.0	16.0	8
Typical	27.0	21.0	12

(6063 Alloy data per Aluminum Association Standards & Data Manual)

Chemical Composition (weight percent)

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others	
									Each	Total
C57B	0.2-0.6	0.35	0.10	0.15	0.25-0.5	0.10	0.10	0.10	0.05	0.15
6063	0.2-0.6	0.35	0.10	0.10	0.45-0.9	0.10	0.10	0.10	0.05	0.15

Chemical composition is in weight percent max unless shown as a range or minimum.

Remainder = Aluminum

Electrical Conductivity: The average electrical conductivity in % IACS (International Annealed Copper Standard) is 54.6.

Thermal Conductivity: Approximately 207 W/m K° at room temperature.

Temperature °C (°F)	Thermal Conductivity W/m-K	
	C57B - T5 (Average)	6063 - T5 (Average)
23°C (73.4°F)	207	203
50°C (122.0°F)	212	208
100°C (212.0°F)	218	214
150°C (302.0°F)	221	218
200°C (392.0°F)	224	220
250°C (482.0°F)	226	223

Machinability: Machinability tests have indicated C57B alloy is comparable to 6063 alloy. High speed machining techniques and the use of chip breakers are recommended to enhance machinability and manage chip formation.

Anodizing: Alloy C57B is comparable to 6063 alloy for anodizing capability and responds well to clear, clean and color dye, brite dip, and hard coat anodizing methods.