
Aluminium 6063 Data Sheet

6063 Overview

6063 is a medium strength heat treatable alloy with good corrosion resistance, weldability and responsiveness to anodising. 6063 is typically ordered as temper T5 for general purpose applications whereas temper T6 may be required for increased mechanical properties.

Common Applications

6063 can be extruded to complex shapes applicable to a range of industrial and commercial applications where superior surface finish is important. It is commonly used for windows, doors commercial building requirements, general manufacturing and fabrication work. This also includes irrigation, marine, furniture and transport.

Welding

6063 has excellent weldability by all standard methods including GMAW (MIG) and GTAW (TIG). Filler alloy 4043 is the primary filler, with 5356 wire being the suggested alternative.

Machining

Machinability of 6063 is fair to good.

Similar Products

Alloy 6060-T5 may be offered as a substitute to 6063-T5. These two alloys are similar in composition chemically and mechanically, and are functionally interchangeable, however they are different alloys and therefore need to be considered on a fit for purpose basis by the purchaser. Both 6063 and 6060 can be produced to differing tempers though 6063 can be produced to a greater range of tempers that conform to the AS/NZS 1866:1997 (application dependent).

Chemical Composition Specification (%) Single values are maxima except as noted

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other	
									Each	Total
6060	0.3-0.6	0.1-0.3	0.10	0.10	0.35-0.6	0.05	0.15	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

Mechanical Property Specification - Single values are maxima except as noted

Alloy and Temper	Thickness mm		Tensile Strength				Elongation (% min in 50mm)
	Over	Up to	Ultimate		Yield		
			Min	Max	Min	Max	
6060 T1		<12mm	115	-	60	-	12
6060 T5		<12mm	150	-	110	-	8
6063 T1		<12mm	115	-	60	-	12
6063 T4		<150mm	130	-	70	-	12
6063 T5		<12mm	150	-	110	-	8
6063 T6		<25mm	205	-	170	-	8

Standards Referenced

AS/NZS 1866:1997 Reconfirmed 2020 – Aluminium and aluminium alloys – Extruded rod, bar, solid and hollow shapes

AS/NZS 1664.2:1997 - Aluminium structures - Allowable stress design

AS/NZS 1665:2004 - Welding of aluminium structures

AAC (Australian Aluminium Council) publication – “Aluminium Standards Data and Design, Wrought products”.