
Aluminium 7005 Data Sheet

7005 Overview

7005 is a heat treatable high strength alloy with excellent corrosion resistance and excellent weldability with a structural surface finish. The higher strength of 7005 is ideal for structural applications particularly in marine and transport.

Density of 2.78g/cm³

Common Applications

7005 has a higher initial and welded strength to 6xxx series structural alloys and is preferred in large and complex extrusions like load bearing members for road and rail vehicles.

Welding

7005 has excellent weldability by all standard methods including GMAW (MIG) and GTAW (TIG). Filler alloy 4043 is the primary filler though 5356 wire is the suggested alternative.

Machining

7005 has good machinability.

Similar Products

Structural alloys 6082 and 6351 are alternatives to 7005 though they have lower mechanical properties.

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

Alloy	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other	
									Each	Total
6351	0.7-1.3	0.5	0.10	0.4-0.8	0.4-0.8	-	0.20	0.20	0.05	0.15
6082	0.7-1.3	0.5	0.10	0.4-1.0	0.6-1.2	0.25	0.20	0.10	0.05	0.15
7005	0.35	0.40	0.10	0.20-0.7	1.0-1.8	0.06-0.20	4.0-5.0	0.01-0.06	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	
6351 T6	<150mm		295	-	255	-	8
6082 T6	<20mm		295	-	255	-	7
7005 T593	4.5	20	350	-	300	-	10

Standards Referenced

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

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

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