

7075 Aircraft Aluminum - Haomei Aircraft Grade Aluminum

7075 aircraft aluminum is one of the highest strength aluminum alloys available, on par with several types of steel. Its strength-to-weight ratio is excellent, and it is ideally used for highly stressed parts. Because of its strength threshold, it is often used for those parts of the airplane that experience high-stress levels like the wing spar. Available in the alclad form to provide corrosion resistance with the over-all high strength being only moderately affected.

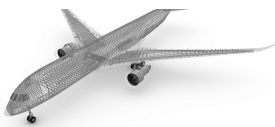
Aluminium Alloy 7075 offers the highest strength of the common screw machine alloys. The superior stress corrosion resistance of the T173 and T7351 tempers makes alloy 7075 a logical replacement for 2024, 2014 and 2017 in many of the most critical applications. The T6 and T651 tempers have fair machinability. Alloy 7075 is heavily utilized by the aircraft and ordnance industries because of its superior strength.

Properties of 7075 Aircraft Aluminum

Chemical Composition Limits											
Weight%	Al	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Other Each	Others Total
7075 min	Rem	-	-	1.2	-	2.1	0.18	5.1	-	-	-
7075 max	Rem	0.40	0.50	2.0	0.30	2.9	0.28	6.1	0.20	0.05	0.15

Material	Temper	Size (")	Tensile Strength (ksi)	Yield Strength (ksi)	Elongation in 2" %
Alloy 7075 Bar	T651	-	77	66	7
Alloy 7075 Bar	T7351	<4"	68	56	10
Alloy 7075 Bar	T73511	<0.25	68	58	7
Alloy 7075 Bar	T73511	0.25 - 1.5	70	61	8
Alloy 7075 Bar	T73511	1.5 - 3.0	69	59	8
Alloy 7075 Bar	T6511	<0.25	78	70	7
Alloy 7075 Bar	T6511	0.25 - 0.5	81	73	7
Alloy 7075 Bar	T6511	0.5 - 3.0	81	72	7

Material	Temper	Thickness (in)	Tensile Strength (ksi)	Yield Strength (ksi)	Elongation %
Alloy 7075 Sheet	T6 Bare	0.125 - 0.25	78	69	8



Alloy 7075 Sheet	T651 Bare	0.25 - 0.50	78	67	9
Alloy 7075 Sheet	T651 Bare	0.5 - 1.0	78	68	7
Alloy 7075 Sheet	T6 Clad	0.188 - 0.25	75	64	8
Alloy 7075 Sheet	T651 Clad	0.25 - 0.50	75	65	9
Alloy 7075 Sheet	T651 Clad	0.5 - 1.00	78	68	7

Characteristic	English	Metric
Nominal Density (68° F / 20°C)	0.101 lbs./ in ³	2.80 Mg/m ³
Melting Range	990° F - 1175° F	532°C - 635 °C
Specific Heat (212 °F / 100°C)	0.23 BTU/lb - °F	960 J/kg-°K

Characteristics of 7075 Aircraft Grade Aluminum

- Poor formability or workability
- Poor weldability
- Fair machinability
- Average resistance to corrosion
- Heat-treated
- High strength
- Commonly used in the aerospace industry

Applications of 7075 Aircraft Aluminium

Due to its high strength and good resistance to stress-corrosion cracking, aluminum 7075 is commonly used for:

- Structural parts that are highly stressed
- Fittings for aircraft
- Shafts and gears
- Components of missiles
- Additional parts for the aircraft and aerospace industry

