6082 T6 Aerospace Aluminum Pipe Tube

A high-strength, corrosion-resistant aluminum alloy tube, 6082 aviation aluminum tube is typically utilized in the production of airplanes and other aircraft components. The strongest of the 6000 series alloys, 6082-T6 drawn tube is a medium-strength alloy with exceptional corrosion resistance.

Despite being a relatively new alloy, 6082 has replaced 6061 in many applications due to its greater strength. Complex extruded and drawn tubes with thin walls can be made from 6082 alloy.

1．Specifications of 6082 aluminum tube

Specifications	
Grade	6061, 6063, 6082, 7050, 7075, 5052, 5056, etc
Temper	T5/T6
Standard	GB/T3190-2008;GB/T4437.1-2000, etc
Length	1-6m or as you request
Wall Thickness	0.8-40mm
Shape	round, square, flat or as you request
Tradeterm	FOB, CFR, CIF, Ex-factory price
Payment term	TT, L/C, West Union and other
Package	Wooden case or as you request
Export to	North and South America, Africa, Europe, Oceania, etc
Application	Military machinery, Aircraft structure, trackwheel, Auto-industry, and various structure
Standard	BS L100, BS L114, BS1474, EN 573, EN 755, EN 754, AS9100

2．Chemical composition of 6082 aviation aluminum tube

Chemical composition	%
Al	96.4%-98.8%
Cu	0.6%-1.2%

Si	0.7%-1.3%
Mg	0.6%-1.2%
Mn	0.4%-1.0%
Cr	0.25%-0.35%
Zn	≤0.2%
Ti	≤0.1%

3．6082 aviation aluminum tube physical properties

Physical properties	Value
Density	2.70 g/cm^3
Elastic modulus	70 GPa
Melting point	555 ° C
Coefficient of thermal expansion	23.2×10^{-6}/° C
Thermal conductivity	180 W/mK
Conductivity	33.0 MS/m

4．Mechanical Properties of 6082 T6 Aluminum Tube

Temper	Wall thickness (mm)	Tensile strengthMPa	Yield Strength MPa	Elongation %	Hardness HB
O, H111	≤ 20	Max. 160	Max. 110	15	35
T6	≤ 20	Min. 205	Min. 110	14	70
T6	≤ 5	Min. 310	Min. 255	8	95
T6	5 < t ≤ 20	Min. 310	Min. 240	10	95

5．Equivalent Grades of 6082 Aluminum Tube

UNS	EN	DIN	ISO	BS (OLD)	USA	WNR
A96082	AW-6082	AlMgSi1	Al Si1MgMn	HE30	AA6082	3.2315

6．Advantages of 6082 aluminum tube

Very good solderability

Good formability

Excellent corrosion resistance

Highest strength 6xxx alloy

7．Application of 6082 aerospace aluminum tube

A high-strength, corrosion-resistant aluminum alloy tube, 6082 aviation aluminum tube is typically utilized in the production of airplanes and other aircraft components. Among these components could be:

1. The pipe in the airplane fuel tank
It is typically utilized to make parts like fuel tanks, fuel pipes, and so forth that need to be highly intense and resistant to corrosion.

2. Structure of the fuselage
Support rods, connecting rods, counterweight rods, and frames for aircraft fuselage structures can all be made from 6082 aviation aluminum tubes.

3. Components of engines
Intake ducts, exhaust pipes, fuel delivery pipes, hydraulic pipes, and other components for aircraft engines can also be made from 6082 aviation aluminum tubes.

4. Equipment for landing
Support rods and other landing gear components can be made using 6082 aviation aluminum tubes.

5. Supplementary apparatus

Components of aircraft auxiliary equipment, including air conditioning, hydraulic systems, fuel tanks, and fuel delivery systems, can also be made from 6082 aviation aluminum tubing.

8．6082 aluminum tube manufacturing process

Extrusion: To create tubes and other shapes, the alloy is first heated via a die. Materials of structural or seamless quality can be processed using this method.
Drawing: To reach the final dimensions for drew tubes, seamless extruded pipes are drawn via a die, guaranteeing accuracy and consistency.

A．Welding recommendations for 6082 aluminum tube

Although 6082 has excellent weldability, the welded area's strength is lower. It is advised to use alloy 4043 filler wire while welding 6082 itself. Alloy 5356 filler wire should be used when welding 6082 to 7005.

B．Quality inspection report — traceable

Strict quality control is applied to our products, and a comprehensive set of quality inspection reports is provided.
Ultrasonic testing: Verifies that there are no internal flaws.
Analysis of Chemical Composition: Adheres to industry norms.
Mechanical Performance Testing: Confirms the robustness of the product.
Non-Destructive Testing: Thorough evaluation of risks.
Visual Inspection: Pursuing excellence.
Records of Traceability: Completely traceable at every stage.

9．The difference between 6082 and 6061 aluminum alloy

Two aluminum alloys that are frequently used are 6082 and 6061. Their chemical makeup, mechanical characteristics, processing efficiency, and areas of use differ in certain ways.

The alloy 6082 exhibits good weldability and processing performance, making

it appropriate for situations where these qualities are highly valued.
For situations requiring great strength and mechanical qualities, the 6061 alloy is appropriate due to its high strength and good mechanical qualities.

The needs of the particular application determine which alloy is selected.