

NON-FERROUS

Aluminum Alloys: AA6082 | AA5083 | AA2024 | AA1100

AA6082

Specification

Aluminum Alloy A6082 is for structural applications, including rod, bar, tube and profiles. This alloy offers similar but not equivalent physical characteristics compared to 6061 alloy, and slightly higher mechanical properties in the T6 condition. Alloy 6082 is very common in Europe and is gaining popularity in the United States for rod and bar machining stock, seamless tubing, structural profiles and custom profiles. This alloy also offers good finishing characteristics and responds well to anodizing. The most common anodizing methods include clear, clear and color dye, and hardcoat. Alloy 6082 offers good weldability, brazeability, corrosion resistance, formability, and machinability.



6082 Standard Tempers

O	Annealed applies to products that are annealed to obtain the lowest strength temper.
T4	Solution heat treated and naturally aged. (See Note A.)
T5	Cooled from an elevated temperature shaping process and artificially aged. (See Note B.)
T6	Solution heat treated and artificially aged. (See Note C.)

Note A : 6082 alloy is reconized by the Aluminum Association, however the tempers have not been registered and cannot be found in the Aluminum Association's Aluminum Standards and Data manual or other standard U.S. Industry specification. BS-EN signifies British standards published by European Committee for Standardization (CEN). Note B: Applies to products that are not cold worked after cooling from an elevated temperature shaping process, or in which the effect of cold wok in flattening or straightening may not be recognized in mechanical properties. Note C: Applies to products that are not cold worked after solution heat-treatment, or in which the effect of cold work in flattening or straightening may not be recognized in mechanical properties.

Applications

6082 is typically used in Structuarl sections and components, Offshore applications, High stress applications, Trusses, Bridges, Cranes, Transport applications, Ore skips, Beer barrels 6082 aluminium is available from WanJoo Metal Inc. in the following forms with a T6 temper: Square bar, Square box section, Rectangular box section, Channel, Tee section, Equal angle, Unequal angle, Flat & Round bar, Tube, Sheet.

AA5083

Specification

Aluminum 5083 is an aluminum alloy suitable for cryogenic applications down to design temperatures of minus 165°C, since alloys of this type do not show the ductile/brittle transition phenomenon. Apart from alu- minum, the main other ingredient is magnesuim. 5083 is one of the most widely used Aluminum alloys especially in the transportation industry. The soft, "O" temper plates of this alloy is used, for example in the construction of land transportation vehicles such as tanker lorries. Currently the use of this alloy is limited to those applications where the service thmperature is less than 65°C. This limitation originates from an anticipated



susceptibility of this alloy to intergranular and stress corrosion during service at temperatures above 60°C. The susceptibilities to intergranular and hence stress corrosion has been shown to originate from the precipitation of Mg containing anodic intermetallics on the grain boundaries. Understanding the decomposition of Mg in solid solution is therefore of paramount importance to finding solutions so that the stress corrosion related problems can be eliminated.

5038 Standard Tempers

O	Annealed wrought alloy.
H111	Some work hardening imparted by shaping processes but less than required for a H1111 temper.
H32	Work hardened and stabilised with a quarter hard temper.

Applications

5083 is used in Cryogenic applications of productions, storage and transportation of liquid, petroleum and industrial gases. Missile containers, Pressure vessels, Shipbuilding, Hulls and superstructures of ships such as fast ferries, naval craft and workboats, heavy-duty truck and trailer assemblies, mechanical components, jigs, fixtures, flat beds

AA2024

Specification

Aluminum 2024 is an aluminum alloy, with copper and magnesium as the alloying elements. It is used in applications requiring high strength to weight ratio, as well as good fatigue resistance. It is not weldable, and has average machinability. Due to poor corrosion resistance, it is often clad with aluminium or Al-1Zn for protection, although this may reduce the fatigue strength. 2024 is one of the best known of the high strength aluminum alloys. With its high strength and excellent fatigue resistance, it is used to advantage on structures and parts where good strength-to-weight ratio is desired.

It is readily machined to a high finish. It is readily formed in the annealed condition and may be subsequently heat treated. Arc or gas welding is generally not recommended, although this alloy may be spot, seam or flash welded. Since corrosion resistance is relatively low, 2024 is commonly used with an anodized finish or in clad form (Alclad) with a thin surface layer of high purity aluminum.



2024 Standard Tempers

O	Maximum tensile strength no more than 30,000 - 32,000 psi (207-220 MPa), and maximum yield strength no more than 14,000 psi (96 MPa). The material has elongation (stretch before ultimate failure) of 10-12%.
T3	Ultimate tensile strength of 58,000 - 62,000 psi (400 - 427 MPa) and yield strength of at least 39,000 - 40,000 psi (269-276MPa). It has elongation of 10-15%.
T351	Ultimate tensile strength of at least 57,000 - 62,000 psi (393 - 427 MPa) and yield strength of 40,000 - 41,000 psi (276-282 MPa). It has elongation of 4-12%.

Aluminum alloy 2024 has a density of 2.73 g/cm³(0.098 lb/in³) The mechanical properties of 2024 depend greatly on the temper of the material.

Applications

2024 is used in Aircraft fittings, gears and shafts, bolts, clock parts, computer parts, couplings, fuse parts, hydraulic valve bodies, missile parts, munitions, nuts, pistons, rectifier parts, worm gears, fastening devices, veterinary and orthopedic equipment, structures.

AA1100

Specification

Aluminum 1100 is commercially pure aluminum. It is soft and ductile and has excellent workability. It is ideal for applications involving intricate forming because it work hardens more slowly than other alloys. It is the most weldable of aluminum alloys, by any method. It is non heat-treatable. It has excellent resistance to



corrosion and is widely used in the chemical and food processing industries. It responds well to decorative finishes which make it suitable for giftware.

1100 Standard Tempers

O	Commercially pure aluminum, not respond to any heat treatment. Cold working will cause hardening of the alloy.
H14	Strain hardened, Primarily for joining aluminum parts where a low shear strength is adequate.
T18	Treated using treating solutions and under conditions, followed by washing with water and then drying.

Applications

1100 is used in Aluminum electrical bus bar installation, food packaging trays, Decorated foil pouches for food and drink, Decorative domestic home items, Architectural trim or Moldings.

Ferro Molybdenum

Specification

MO:60%min	CU:0.5%MAX
S:0.1%MAX	P:0.05%MAX
C:0.10%MAX	C:0.10%MAX
PACKING: IN 250KG STEEL DRUM ON PALLETS	
SIZE: 10-50MM, 90%MIN	
ORIGIN: CHINA	



Applications

Ferro molybdenum is used mainly in production of alloys steel, such as structural steel, spring steel, bearing steel, tool steel, anti-acid stainless steel, heat-resistant steel and magnetic steel etc.

Molybdenum Oxide

Specification

Mo: 57%min or 51%min	C:0.1%max
P:0.05%max	Cu:0.50%max
S:0.1%max	Si:1.5%max

PACKING: IN 250KG STEEL DRUM ON PALLETS OR 1MT P.P BAG

SIZE:0-50MM 90%MIN

ORIGIN: CHINA

Package: Either drums or plastic woven bags.

Drums 100kg or 250kg.

Seal the cover with lead, pallet provided; Plastic woven bags 1000kg.

Your special requests are always available



Applications

It is powder and light-green mainly used in the field of smelting ferromoly, molybdenum chemical industry.

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