

WGB Industries Inc.

ALLOY A356.2

A356.2 is a widely used aluminum-silicon-magnesium alloy in the casting industry. Known for its excellent casting properties, it is extensively used in the automotive and aerospace sectors due to its outstanding mechanical properties. This alloy offers good corrosion resistance, excellent dimensional stability, and can be heat-treated to enhance its performance. Alloy has excellent weldability and a high strength-to-weight ratio. Machining characteristics are good, however carbide-tipped tools are recommended. Common applications include automotive engine components, aerospace parts, and structural castings.

APPLICATIONS

- Engine components
- Cylinder heads
- Intake manifolds
- Aerospace components
- Structural castings
- High-performance parts
- Motor Housings
- Valve bodies

Mechanical Properties

Mechanical properties of A356.2 can vary based on the temper or heat treatment condition. Here are typical properties for F As-Cast, T51 and T6 conditions:

Chemical Composition Limit by %

- Silicon (Si): 6.5 - 7.5
- Magnesium (Mg): .25 - .45
- Iron (Fe): .15 max
- Copper (Cu): 0.2 max
- Manganese (Mn): .10 max
- Zinc (Zn): .10 max
- Titanium (Ti): .20 max
- Others (total): 0.15 max
- Aluminum (Al): Balance

• As-Cast (F Condition)

- Tensile Strength: 23 (ksi)
- Yield Strength: 12 (ksi)
- Elongation: 6% in 2"
- Hardness: NA

• Heat Treated (T51 Condition)

- Tensile Strength: 26 ksi)
- Yield Strength: 18 ksi)
- Elongation: 3% in 2"
- Hardness: NA

• Heat-Treated (T6 Condition)

- Tensile Strength: 40 ksi)
- Yield Strength: 30 ksi)
- Elongation: 6% in 2"
- Hardness: 75