

A Product of the
Cooperative Engineering Program

SAE J457 AUG85

**Chemical
Compositions,
Mechanical Property
Limits, and
Dimensional
Tolerances of SAE
Wrought Aluminum
Alloys**

SAE Standard
Reaffirmed August 1985

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Submitted for Recognition as
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REFERENCE SECTION:

- ANSI H35.1, Alloy and Temper Designation Systems for Aluminum
- ANSI H35.2, Dimension Tolerances for Aluminum Mill Products
- ASTM B209, Specification for Aluminum-Alloy Sheet and Plate
- ASTM B210, Specification for Aluminum-Alloy Drawn Seamless Tubes
- ASTM B211, Specification for Aluminum-Alloy Bars, Rods, and Wire
- ASTM B221, Specification for Aluminum-Alloy Extruded Bars, Rods, Shapes, and Tubes
- ASTM B234, Specification for Aluminum-Alloy Drawn Seamless Tubes for Condensers and Heat Exchangers
- ASTM B236, Specification for Aluminum Bar for Electrical Purposes (Bus Bar)
- ASTM B241, Specification for Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube
- ASTM B247, Specification for Aluminum-Alloy Die and Hand Forgings
- ASTM B308, Specification for Aluminum-Alloy Standard Structural Shapes, Rolled or Extruded
- SAE J454, General Data on Wrought Aluminum Alloys
- SAE J993, Alloy and Temper Designation Systems for Aluminum
- Aluminum Standards and Data Manual

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**CHEMICAL COMPOSITIONS, MECHANICAL PROPERTY LIMITS,
AND DIMENSIONAL TOLERANCES OF SAE WROUGHT ALUMINUM ALLOYS**

1. **SPECIFICATION OF WROUGHT ALUMINUM ALLOYS:** The Aluminum Association publishes a manual entitled Aluminum Standards and Data which includes the specified limits registered for the chemical composition and mechanical properties of standard aluminum alloys commercially available in the wrought product forms shown in Tables 2 and 3 of SAE J454.

NOTE: The Aluminum Association standards may be obtained at no cost to users of aluminum from The Aluminum Association, 750 Third Avenue, New York, New York 10017.

2. **CHEMICAL COMPOSITION LIMITS:** The chemical composition limits for each wrought aluminum alloy are registered in accordance with the designation system presented in ANSI H35.1, Alloy and Temper Designation Systems for Aluminum, and SAE J993. The chemical composition limits are tabulated by alloy and are the same for all wrought product forms in which the alloy is available. In addition, the tabulation is by alloy components in the case of clad sheet, plate, and tubular products.
3. **MECHANICAL PROPERTY LIMITS:** The specified mechanical property limits are established for each wrought product; that is, sheet, plate, drawn tube, extruded shapes, pipe and extruded tube, rolled shapes, rod, bar, wire, and die forgings.
4. **DIMENSIONAL TOLERANCES:** The dimensional tolerances to which aluminum alloy mill products are commercially produced are in accordance with the latest revision of the ANSI H35.2, Dimensional Tolerances for Aluminum Mill Products. For sizes outside commercial limits, the tolerance shall be as agreed upon by the supplier and purchaser.

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