



# AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 4156E

Superseding AMS 4156D

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### ALUMINUM ALLOY EXTRUSIONS

0.68Mg - 0.40Si (6063-T6)

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, rods, wire, shapes, and tubing.
3. **APPLICATION:** Primarily for hinges, trim strips, window frames, sills, and moldings where good surface finish is required. Also may be used to advantage for hollow, partially enclosed, and intricate shapes for which an alloy having good extruding characteristics is required.
4. **COMPOSITION:**

|                         | min       | max  |
|-------------------------|-----------|------|
| Magnesium               | 0.45      | 0.9  |
| Silicon                 | 0.20      | 0.6  |
| Iron                    | --        | 0.35 |
| Chromium                | --        | 0.10 |
| Manganese               | --        | 0.10 |
| Titanium                | --        | 0.10 |
| Copper                  | --        | 0.10 |
| Zinc                    | --        | 0.10 |
| Other Impurities, each  | --        | 0.05 |
| Other Impurities, total | --        | 0.15 |
| Aluminum                | remainder |      |

5. **CONDITION:** Solution and precipitation heat treated.
  - 5.1 Unless otherwise specified, extrusions shall be supplied with an as-extruded surface finish; light polishing to remove minor surface imperfections is permissible provided such imperfections can be removed within the dimensional tolerances.
6. **TECHNICAL REQUIREMENTS:** The product shall conform to the following requirements; tensile properties shall be determined in accordance with the latest issue of AMS 2355.
  - 6.1 **Tensile Properties:**

| Nominal Diameter or<br>Least Thickness<br>(rods, bars, wire, shapes) or<br>Nominal Wall Thickness<br>(tubing)<br>inch | Tensile<br>Strength<br>psi, min | Yield Strength at 0.2% Offset<br>or at Extension Indicated<br>(E = 9,900,000) |                                      | Elongation<br>% in 2 in.<br>or 4D, min |
|-----------------------------------------------------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------|--------------------------------------|----------------------------------------|
|                                                                                                                       |                                 | psi, min                                                                      | Extension Under Load<br>in. in 2 in. |                                        |
| Up to 0.125, excl                                                                                                     | 30,000                          | 25,000                                                                        | 0.0091                               | 8                                      |
| 0.125 to 1.000, incl                                                                                                  | 30,000                          | 25,000                                                                        | 0.0091                               | 10                                     |

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