



AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N. Y. 10017

AMS 4350G

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MAGNESIUM ALLOY EXTRUSIONS 6.5Al - 1.0Zn (AZ61A-F)

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, tubing, and shapes.
3. **APPLICATION:** Primarily for low strength parts requiring rigidity and low density. Special care is necessary to prevent corrosion.
4. **COMPOSITION:**

	min	max
Aluminum	5.8	7.2
Zinc	0.40	1.5
Manganese	0.15	--
Silicon	--	0.05
Copper	--	0.05
Nickel	--	0.005
Iron	--	0.005
Other Impurities, total	--	0.30
Magnesium	remainder	

5. **CONDITION:** As extruded.
- 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.

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6.1 Tensile Properties:

Ø	Nominal Diameter or Least Thickness Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,500,000)		Elongation % in 2 in. or 4D, min
			psi, min	Extension Under Load in. in 2 in.	
Solid Shapes					
	Up to 0.250, excl	38,000	21,000	0.0105	8
	0.250 to 2.499, incl	40,000	24,000	0.0114	9
	Over 2.499 to 4.999, incl but not over 25 sq in. Cross Sectional Area	40,000	22,000	0.0108	7
Hollow and Semi-Hollow Shapes					
	All Wall Thicknesses	36,000	16,000	0.0089	7
Tubing					
	0.028 to 0.750, incl, in Wall Thickness, 6.000 max OD	36,000	16,000	0.0089	7

6.1.1 When a dispute occurs between purchaser and vendor over the yield strength values, yield strength determined by the offset method shall apply.

6.2 **Hardness:** Material should have hardness not lower than Brinell 50 using 500 kg load and 10 mm ball or 1000 kg load and 9/16 in. ball, or not lower than Brinell 57 using 1000 kg load and 10 mm ball, but shall not be rejected on the basis of hardness if the tensile property requirements are met.

7. **QUALITY:** Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.

8. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to all applicable requirements of the latest issue of AMS 2205.

9. **REPORTS:**

9.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a report stating that the product conforms to the chemical composition and technical requirements of this specification. This report shall include the purchase order number, material specification number, size or section identification number, and quantity.

9.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a statement that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.