AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4352

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MAGNESIUM ALLOY EXTRUSIONS
ZK60A-T5

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Bars, rods, tubing, and shapes.

3. APPLICATION: Primarily for parts requiring good toughness and moderate abrasion resistance.

4. COMPOSITION:

Zinc	4.8 - 6.2
Zirconium	0.45 min
Copper	0.05 max
Nickel	0.005 max
Iron	0.005 max
Other Impurities, total	0.30 max
Magnesium	remainder

5. CONDITION:

5.1 Unless otherwise specified, extrusions shall be furnished in the aged condition.

5.2 Unless otherwise specified, all extrusions shall be furnished with the as extruded surface.

6. TECHNICAL REQUIREMENTS:

6.1 Aging: Shall consist of heating to 275 F ± 10 and holding at temperature for a minimum of 48 hours, or process equivalent thereto.

6.2 Tensile Properties:

	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated psi, min	Extension Under Load, inch in 2 in.	Elongation % in 2 in., min
Bars, Rods and Solid Shapes	45,000	36,000	0.0151	4
Tubes and Hollow Shapes	46,000	38,000	0.0157	4

6.3 Compression Properties:

Nominal Cross Sectional Area, Sq in.	Compressive Yield Strength, Longitudinal, psi, min		
	Bars, Rods, & Solid Shapes Except Web Sections of I-beams, Channels, etc.	Web Sections of I-beams, Channels, etc.	Tubing and Hollow Shapes
Under 2.00	30,000	27,000	26,000
2.00 to 3.00, excl	28,000	25,200	26,000
3.00 to 5.00, incl	25,000	22,500	26,000

Note 1. For sizes other than those shown above, compression properties shall be as agreed upon by purchaser and vendor.

Note 2. The term "excl" is used to apply only to the higher figure of the specified range.

6.3.1 Compression yield strength shall be measured in accordance with ASTM E9-49T at a 0.2% offset and a speed of loading of approximately 0.002 inches per inch per minute using a 3-inch length specimen cut from the full shape or section indicated, as applicable. When the cross-sectional area exceeds one square inch, a representative specimen having approximately one square inch cross section shall be cut from the section for test.

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

8. TOLERANCES: Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2211 as applicable.

8.1 Flatness: The deviation from flat shall not exceed 0.005 inch for widths 1 inch and under and 0.005 inch per inch of width for widths over 1 inch.

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 chemical composition and tensile and compression properties of the product conform to the requirements specified. This report shall include the purchase order number, material specification number, size or part 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 extrusions, part number, and quantity. When extrusions for making parts are produced or purchased by the parts vendor, that vendor shall inspect each lot of extrusions to determine conformance to the requirements of this specification, and shall include in the report a certification that the extrusions conform, or shall include copies of laboratory reports showing the results of tests to determine conformance.