AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 4352A

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MAGNESIUM ALLOY EXTRUSIONS
5.5Zn - Zr (ZK60A-T5)

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, 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
Manganese	0.15 max
Other Impurities, each	0.05 max
Other Impurities, total	0.20 max
Magnesium	remainder

5. CONDITION:

5.1 Ø Unless otherwise specified, extrusions shall be furnished in the precipitation heat treated condition.

5.2 Unless otherwise specified, all extrusions shall be furnished with an as-extruded surface finish.

6. TECHNICAL REQUIREMENTS:

6.1 Ø Heat Treatment: Shall consist of heating to 275 F ± 10 and holding at heat for not less than 48 hr, or process equivalent thereto.

6.2 Tensile Properties:

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	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 6,500,000) psi, min	Extension Under Load in. in 2 in.	Elongation % in 2 in. min
Bars, Rods, and Solid Shapes Cross Sectional Area 5 sq in. and under	45,000	36,000	0.0151	4
Tubes and Hollow Shapes Cross Sectional Area 5 sq in. and under	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 and Channels, and Other Extruded Sections Having Width to Thickness Ratio of 20 to 1 or Greater	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 E9-52T ø at 0.2% offset.

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 ø issue of AMS 2205 as applicable.

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 ø 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 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 are 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.