AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York, N.Y. 10017

AMS 4387B

Superseding AMS 4387A

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MAGNESIUM ALLOY EXTRUSIONS
2.3Zn - 0.60Zr (ZK21A-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 parts requiring good weldability and moderate strength and which do not require stress relief after welding.

4. COMPOSITION:

	min	max
Zinc	2.0	2.6
Zirconium	0.45	0.8
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.

6.1 Tensile Properties:

	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. or 4D, min
Bars, Rods, Wire, and Solid Shapes Cross Sectional Area under 5 sq in.	38,000	28,000	0.0126	4
Tubing 3.000 in. and under in OD, and Hollow Shapes	34,000	26,000	0.0120	4

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.

6.1.2 If sizes other than those shown are ordered, tensile property requirements shall be as agreed upon by purchaser and vendor.

6.3 Compressive Properties: Except for wire, material shall be capable of meeting the following requirements. Specimens shall be tested in the longitudinal direction in accordance with the issue of ASTM E9 listed in the latest issue of AMS 2350.

	Bars, Rods, and Solid Shapes Cross Sectional Area under 5 sq in.	Tubing 3.000 in. and under in OD, and Hollow Shapes
Yield Strength at 0.2% Offset, psi	20,000 min	14,000 min

6.3.1 If sizes other than those shown are ordered, compressive properties shall be as agreed upon by purchaser and vendor.

7. QUALITY: Material shall be uniform in quality and condition, clean, sound, and free from segregation and 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 and its revision letter, 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 and its revision letter, 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.

10. IDENTIFICATION: Unless otherwise specified, the product shall be identified as follows:

10.1 Each straight bar, rod, and tube 0.500 in. and over in OD or least width of flat surface and each straight shape with configuration allowing access to a flat surface at least 0.500 in. wide recessed not more than 1 in. below the outline of the shape shall be marked in a row of characterers recurring at intervals not greater than 3 ft with the alloy number and temper, AMS 4387 or applicable Federal or Ø Military specification designation, and manufacturer's identification. The inspection lot number shall be included in the row marking or shall be marked near one end. An inspection lot shall be material of the same alloy, temper, section, and size subjected to inspection at one time. The characters shall be of such size as to be clearly legible, shall be applied using a suitable marking fluid, and shall be sufficiently stable to withstand normal handling.

10.2 All straight extrusions other than those of 10.1 shall be securely bundled, boxed, or secured on lifts Ø and identified by two tags, marked with the information of 10.1 including the inspection lot number, and attached, not farther than 2 ft from each end, to the product in each bundle, box, or lift.

10.3 Coiled wire shall be identified with the information of 10.1, including the inspection lot number, marked Ø on a tag attached to each coil.