A ROSPACE
MAT IAL SPECIFICATIONS
SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

AMS 4352B

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MAGNESIUM ALLOY EXTRUSIONS
5.5Zn - Zr (ZK60A-T5)
Precipitation Heat Treated

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

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

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

4. COMPOSITION:

	min	max
Zinc	4.8	6.2
Zirconium	0.45	--
Manganese	--	0.15
Other Impurities, each	--	0.05
Other Impurities, total	--	0.20
Magnesium	remainder	

5. CONDITION: Precipitation heat treated.

5.1 Ø 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:

6.1 Ø Heat Treatment: Shall consist of heating to 300 F ± 15 (148.9 C ± 8.3), holding at heat for not less than 24 hr, and cooling in air.

6.2 Longitudinal Tensile Properties:

6.2.1 Bars, Rods, Wire, and Solid Shapes:

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Nominal Cross Sectional Area Square 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.	
Up to 5, excl	45,000	36,000	0.0151	4
5 to 25, excl	45,000	34,000	0.0145	6
25 to 40, excl	43,000	31,000	0.0135	6

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6.2.2 Tubing:

Nominal Outside Diameter and Wall Thickness Inches	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
Up to 3 dia, incl 0.028 to 0.250, incl	46,000	38,000	0.0157	4
Over 3 to 8.500 dia, incl 0.094 to 1.188, incl	44,000	33,000	0.0142	4

6.2.3 Hollow Shapes:

Tensile Strength, psi	46,000 min
Yield Strength at 0.2% Offset or at 0.0157 in. in 2 in. Extension Under Load (E = 6,500,000), psi	38,000 min
Elongation % in 2 in. or 4D	4 min

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

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

6.3 Longitudinal 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.

6.3.1 Bars, Rods, and Solid Shapes:

Nominal Cross Sectional Area Square Inches	Yield Strength at 0.2% Offset psi, min
Up to 2, excl	30,000
2 to 3, excl	28,000
3 to 5, excl	25,000
5 to 10, excl	23,000
10 to 25, excl	22,000
25 to 40, excl	20,000

6.3.2 Tubing:

Nominal Outside Diameter and Wall Thickness Inches	Yield Strength at 0.2% Offset psi, min
Up to 3 dia, incl 0.028 to 0.250, incl	26,000
Over 3 to 8.500, incl 0.094 to 1.188, incl	21,000

6.3.3 Hollow Shapes:

Yield Strength at 0.2% Offset, psi	26,000 min

6.3.4 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, smooth, 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, 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.

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