Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N.Y. 10017

AEROSPACE MATERIAL SPECIFICATION

AMS 4352D
Superseding AMS 4352C
Issued 10-1-51
Revised 5-1-68

MAGNESIUM ALLOY EXTRUSIONS
5.5Zn - 0.45Zr (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, wire, tubing, and shapes.

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

4. COMPOSITION:

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	min	max
Zinc	4.8	6.2
Zirconium	0.45	--
Impurities, total	--	0.30
Magnesium	remainder	

5. CONDITION: Precipitation heat treated.

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 Ø properties shall be determined in accordance with the latest issue of AMS 2355.

6.1 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 Tensile Properties:

6.2.1 Bars, Rods, Wire, and Solid Shapes:

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

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

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

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.

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