

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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Revised

MAGNESIUM ALLOY FORGINGS AZ61X

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

2. COMPOSITION:

Aluminum	5.8 - 7.2
Zinc	0.4 - 1.5
Manganese	0.15 min
Silicon	0.30 max
Copper	0.05 max
Nickel	0.005 max
Iron	0.005 max
Total other impurities	0.30 max
Magnesium	remainder

3. CONDITION: (a) As forged.

(b) Test specimens, machined from separately forged coupons representing the forgings or machined from prolongations on the forgings, shall conform to the following minimum physical properties:

Tensile Strength, psi	38,000
Yield Strength (0.2% Offset), psi	22,000
Equivalent Extension Under Load, Inch in 2 in.	0.0108
Elongation, % in 4D	6

(c) When test specimens are machined from forgings with the axis approximately parallel to the forging flow lines, the physical properties shall conform to those specified in (b) above, except that elongation may be as low as 4%, unless otherwise agreed between purchaser and vendor.

(d) Forgings and test specimens shall have hardness of not less than Brinell 50, using 500 kg load and 10 mm ball or the equivalent.

4. STOCK FOR FORGING: (a) The composition shall conform to that of Section 2 above

(b) When a sample of the stock is forged to a test coupon, a test specimen taken from the coupon shall show the physical properties in paragraphs 3(b) and 3(d), but this test is not required in routine inspection. If a test specimen taken from the stock shows the properties in paragraphs 3(b) and 3(d), the test shall be accepted as equivalent to the test of the forged coupon, but this test is not required.

(c) Stock shall be furnished in the as-fabricated condition.

(d) Tolerances shall be in accordance with commercial practice for the class ordered, unless otherwise specified.