

AERONAUTICAL MATERIAL SPECIFICATION

AMS5024B

Society of Automotive Engineers, Inc.
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STEEL - FREE CUTTING Manganese

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

2. **FORM:** Bars, billets, forgings, tubing, or as ordered.

3. **COMPOSITION:**

Individual Bar
Check Analysis
Over or Under

Carbon	0.32 - 0.39	0.02
Manganese	1.35 - 1.65	0.06
Phosphorus	0.045 max	0.008
Sulphur	0.08 - 0.13	--

4. **CONDITION:** (a) Bars and tubing, cold-finished unless otherwise ordered, shall have a surface hardness within the following limits for the size ranges indicated:

<u>Diameter or Thickness, inches</u>	<u>Brinell Hardness</u>
5/8 and under	207 - 255
Over 5/8 to 1, incl.	187 - 255
Over 1 to 3, incl.	170 - 241
Over 3	149 - 217

(b) Forgings shall be normalized and shall have a surface hardness within the limits of Brinell 163-229.

(c) Stock ordered for forging shall be supplied in the condition and finish ordered by the forging manufacturer.

(d) Forgings shall not be supplied, except when specified on the drawing or purchase order.

5. **QUALITY:** Steel shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external defects, consistent with the type of steel involved, which adversely affect its strength, use or machinability. Steel in which defects are revealed during fabrication will be subject to rejection.

6. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2231 for bars and AMS 2253 for tubing (MECHANICAL TYPE) as applicable. Diameter or thickness and width tolerances for bars shall be as specified below:

(a) Diameter or thickness tolerances for all hexagons, and other bars 2.5 inches or less in diameter thickness shall conform to AMS 2231, Table I, column headed "Mean of Carbon .31-.50% incl."

(b) Diameter or thickness tolerances for bars, other than hexagons, over 2.5 inches in diameter or thickness shall conform to AMS 2231, Table II.

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