AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 6324

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S T E E L
.7 Ni .6 Cr .25 Mo (.38 - .43C)

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

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

3. COMPOSITION:

		Individual Bar Check Analysis Over or Under
Carbon	0.38 - 0.43	0.02
Manganese	0.75 - 1.00	0.04
Phosphorus	0.040 max	0.005
Sulphur	0.040 max	0.005
Silicon	0.20 - 0.35	0.02
Nickel	0.55 - 0.85	0.03
Chromium	0.55 - 0.75	0.03
Molybdenum	0.20 - 0.30	0.02

4. GRAIN SIZE: 5 or finer, ASTM E19-39T, method a, unless otherwise specified. A heat of steel predominately 5 or finer with grains as large as 3 is permissible.

5. HARDENABILITY: The hardenability shall be J50=7 min when determined by the standard end-quench test specimen in accordance with the SAE Method of Determining Hardenability published in the latest revision of the SAE Handbook, except that the steel shall be normalized at 1700°F ± 10 and the test specimen austenitized at 1525°F ± 10.

6. CONDITION: (a) Unless otherwise specified, bar stock shall be supplied in a machinable condition with a hardness of not more than Brinell 229, except that if cold drawn stock is ordered, a hardness of Brinell 248 is permissible.

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

(c) Forgings shall be supplied as ordered.

7. DECARBURIZATION: (a) Bars ordered ground, turned or polished shall not be decarburized.

(b) Allowable decarburization of bars ordered for redrawing or for forging shall be as agreed between purchaser and vendor.

7. DECARBURIZATION: (continued)

(c) Decarburization of all bars to which (a) or (b) above is not applicable shall be not greater than the following:

Nominal Diameter or Distance Between Opposite Faces of Bar -- Inches	Maximum Depth of Decarburization Inch
0.375 and less	0.010
Over 0.375 to 0.500, incl.	0.012
Over 0.500 to 0.625, incl.	0.014
Over 0.625 to 1.00, incl.	0.017
Over 1.00 to 1.50, incl.	0.020
Over 1.50 to 2.00, incl.	0.025
Over 2.00 to 2.50, incl.	0.030
Over 2.50 to 3.00, incl.	0.035

(d) Decarburization as allowed in (c) does not apply to bar stock in which definite microstructural requirements must be met. The allowable decarburization of such stock shall be as agreed between purchaser and vendor.

(e) Decarburization shall be determined either by the microscopic or the hardness test method. When the hardness test method is used, the testing procedure shall be acceptable to purchaser and vendor.

8. QUALITY: (a) This steel shall be aircraft quality. It shall be uniform in quality and condition, clean, sound, and free from foreign material and from internal and external defects which adversely affect its strength or machinability. Material revealing defects during fabrication shall be subject to rejection.

(b) Visual examination of deep acid etched bars in the as furnished condition shall show no evidence of abnormal segregation, pipes, cracks, seams, or abnormal change in structure from the surface to the center.

(c) Unless otherwise stated, finished parts are subject to magnetic inspection.

9. TOLERANCES: Unless otherwise specified, tolerances shall conform to AMS 2251 as applicable and/or as specified below:

(a) Cold-finished and all hexagons shall conform to Table I, column headed "Mean of Carbon .45% and less".

10. REPORTS: (a) Unless otherwise specified, the supplier of raw material shall furnish three copies of a notarized report of the chemical composition, grain size, hardenability results, and physical properties when specified in the order, of each heat in each shipment. This report shall include the purchase order number, heat number, material specification number, size, and quantity in each heat. If forgings are supplied, the part number and size of steel used to make the forgings shall also be included.