

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
29 West 39th Street
New York City

AMS 6363

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Revised

STEEL TUBING, (SEAMLESS), ROUND
Chromium Molybdenum (.27 - .33 Carbon)
(180,000 T.S. - .156 Max. Wall Thickness)

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

2. COMPOSITION:

Individual Tube
Check Analysis
Over or Under

Carbon	0.27 - 0.33	0.02 (under only)
Manganese	0.40 - 0.60	0.03
Phosphorus	0.04 max	0.005
Sulphur	0.04 max	0.005
Silicon	0.20 - 0.35	0.02
Chromium	0.80 - 1.10	0.05
Molybdenum	0.15 - 0.25	0.03

3. GRAIN SIZE: 5 or finer as determined on the billet, A.S.T.M. E19-39T, method a, unless otherwise ordered.

4. CONDITION: Heat treated (quenched in oil unless otherwise agreed and tempered) to conform to the following minimum physical properties:

Tensile Strength, lb per sq in.	180,000
Yield Strength (0.2% Set), lb per sq in.	165,000
Equivalent Extension Under Load, inch in 2 in.	0.0150
Elongation, % in 2 in. - Full Tube	8
Strip	5

5. QUALITY: (a) This material must be aircraft quality, uniform in temper and must not reveal defects during the fabrication processes.

(b) Finished parts may be subject to magnetic inspection.

(c) The tubing shall have a good workmanlike finish conforming to the best practice for high quality aircraft material. It shall be smooth, clean, and free from heavy scale or oxide, burrs, seams, tears, grooves, laminations, slivers, pits, and other injurious defects. Surface imperfections such as handling marks, straightening marks, light mandrel and die marks, shallow pits, and scale pattern will not be considered as injurious defects, provided the imperfections are removable within the tolerances specified herein for diameter and wall thickness. The removal of surface imperfections is not required.



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6. TOLERANCES: (a) The following variations in nominal outside diameter are permissible:

<u>Nominal Outside Diameter, inches</u>	<u>Tolerance, inch</u>
Less than 0.5	+0.010
0.5 to 1.5	+0.015
1.5 to 3.0, incl.	+0.030
Over 3.0 to 5.5, incl.	+0.045

(b) The wall thickness of tubes, 0.5 inch or larger nominal outside diameter shall not vary more than plus or minus 10% from the thickness specified; smaller sizes may vary plus or minus 15%.

(c) In no portion of any piece of tubing shall the departure from straightness exceed one part in 600 parts of length.

7. REPORTS: The manufacturer shall furnish three copies of a notarized report of the chemical composition, grain size and physical properties of each heat and size in each shipment. This report shall include the purchase order number, material specification number, heat number, size, and quantity. If parts are supplied, the part numbers shall also be included.

8. IDENTIFICATION: (a) Unless otherwise specified, each tube in sizes 5/8 inch in diameter or over shall be marked with AMS 6363, the manufacturer's name or trade mark, and heat number, at intervals not greater than two feet between centers. The characters shall be not less than 1/4 inch in height. The characters shall be clearly legible and applied to the material by suitable means and suitable marking fluid, and shall not be obliterated by normal handling, nor by grease nor oil, and shall not interfere with welding procedures.

(b) Tubes less than 5/8 inch in diameter may be securely bundled and identified by a metal tag stamped with the above information and attached to each bundle, or boxed and the identification tag enclosed.

(c) Material that cannot be identified at destination is subject to rejection.

9. REJECTIONS: Material not conforming to this specification, or modifications specified on the drawing or the purchase order, is subject to rejection. If samples for verification are desired by the vendor, they must be claimed within three weeks. Rejected material or parts will be held a reasonable time, at vendor's risk, awaiting shipping instructions for the return of same for credit or replacement, as specified. Vendor shall pay all transportation charges.

NOTE: SIMILAR SPECIFICATION: Army-Navy Aeronautical AN-WW-T-850, condition HT-180; is listed for information only and shall not be construed as acceptable alternate unless all requirements of this AMS are met.