

# AERONAUTICAL MATERIAL SPECIFICATION

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

## AMS 6535

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Revised

### STEEL TUBING (SEAMLESS) ROUND .5 Ni .5 Cr .25 Mo (.33-.38 C) (Normalized)

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

2. **COMPOSITION:**

		<u>Individual Tube Check Analysis Over or Under</u>
Carbon	0.33 - 0.38	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	0.40 - 0.60	0.03
Chromium	0.40 - 0.60	0.03
Molybdenum	0.20 - 0.30	0.03

3. **GRAIN SIZE:** 5 or finer as determined on the billet, ASTM E19-39T, method a, unless otherwise ordered. A heat of steel predominately 5 or finer, with grains as large as 3, is permissible.

4. **CONDITION:** Normalized, then stress relieved if cold worked after the normalizing, to conform to the following minimum physical properties, unless otherwise ordered:

<u>Nominal Wall Thickness</u> Inch	<u>Tensile Strength</u> lb per sq in.	<u>Yield Strength at 0.2% Set or at Extension Indicated</u>		<u>Elongation in 2"</u>	
		<u>Extension</u> Under Load lb per sq in.	<u>Extension</u> Under Load inch in 2"	<u>Full Tube</u> %	<u>Strip</u> %
Up to 0.188, incl.	100,000	85,000	0.0097	12	7
Over 0.188	95,000	80,000	0.0093	15	10

5. **QUALITY:** (a) This material must be aircraft quality, uniform in temper and must not reveal injurious 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.