

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
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## AMS 6282c

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STEEL TUBING, MECHANICAL  
0.55Ni - 0.5Cr - 0.25Mo (0.33-0.38C) (SAE 8735)

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. FORM: Heavy wall tubing for machining.
3. APPLICATION: Parts with sections 0.75 in. or less in thickness at the time of heat treatment which require a through-hardening steel capable of developing hardness as high as Rockwell C 40 when properly hardened and tempered and also parts of greater thickness but requiring proportionately lower hardness.

4. COMPOSITION:

		Check Analysis	
		Under Min	or Over Max
Carbon	0.33 - 0.38	0.02	0.02
Manganese	0.75 - 1.00	0.04	0.04
Silicon	0.20 - 0.35	0.02	0.02
Phosphorus	0.040 max	--	0.005
Sulfur	0.040 max	--	0.005
Chromium	0.40 - 0.60	0.03	0.03
Nickel	0.40 - 0.70	0.03	0.03
Molybdenum	0.20 - 0.30	0.02	0.02

5. CONDITION: In a machinable condition, and, unless otherwise specified, cold finished.

6. TECHNICAL REQUIREMENTS:

- 6.1 Hardenability: The hardenability shall be J45=5 min and J41=6 min when determined by the standard end-quench test specimen in accordance with the SAE Method of Determining Hardenability published in the latest issue of the SAE Handbook, except that the steel shall be normalized at 1700 F  $\pm$  10 and the test specimen austenitized at 1500 F  $\pm$  10. The hardenability test is not required on tubing which will not yield a suitable specimen but the steel from which the tubing is made shall conform to the hardenability specified in this paragraph.
- 6.2 Grain Size: Five or finer as determined on the billet, ASTM E19-46, method a. A heat of steel predominantly five or finer with grains as large as three is permissible.
- 6.3 Decarburization:
  - 6.3.1 Tubing ordered ground, turned, or polished shall be free from decarburization on such ground, turned or polished surfaces. Inside decarburization shall not exceed the maximum depth specified in 6.3.3.

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