



AEROSPACE MATERIAL SPECIFICATIONS

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc.

485 Lexington Ave., New York, N. Y. 10017

AMS 5020

Issued 11-1-67

Revised

STEEL BARS, FORGINGS, AND TUBING, FREE CUTTING (0.32 - 0.39C) 11L37

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. FORM: Bars, forgings, mechanical tubing, and forging stock.
3. COMPOSITION:

	min	max
Carbon	0.32 - 0.39	
Manganese	1.35 - 1.65	
Phosphorus	--	0.040
Sulfur	0.08 - 0.13	
Lead	0.15 - 0.35	

- 3.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2259, paragraph titled "Carbon Steels".
4. CONDITION: Unless otherwise ordered, the product shall be supplied in the following condition:
 - 4.1 Bars and Mechanical Tubing 2.50 In. and Under in OD or Distance Between Parallel Sides: Cold finished, suitable for machining on high speed automatic screw machines.
 - 4.2 Bars and Mechanical Tubing Over 2.50 In. in OD or Distance Between Parallel Sides, and Forgings: Hot finished, and normalized or otherwise heat treated to produce best machining qualities.
 - 4.3 Forging Stock: As ordered by the forging manufacturer.

5. TECHNICAL REQUIREMENTS:

- 5.1 Hardness: The product shall have hardness as follows or equivalent, when taken on the surface except on rounds, where a flat as necessary for Brinell accuracy may be made:

5.1.1 Bars and Tubing:

Nominal OD or Distance Between Parallel Sides Inches	Hardness, Brinell
Up to 0.625, incl	207 - 255
Over 0.625 to 1.0, incl	187 - 255
Over 1.0 to 3.0, incl	170 - 241
Over 3.0	149 - 217

5.1.2 Forgings: Brinell 163 - 229.

Technical Board rules provide that: "All technical reports, including standards, approved practices recommended, are advisory only. Their use by anyone engaged in industry or trade is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."