

STEEL BARS AND FORGINGS, HIGH EXPANSION
5.5Mn - 9.5Mi (0.55 - 0.65C)
Annealed

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 10-1-81. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the original issue of the subject specification.

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AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 5623

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

Issued 6-15-59
Revised

STEEL, HIGH EXPANSION
5.5Mn - 9.5Ni (0.55 - 0.65C)
Annealed

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars, forgings, and forging stock.
3. **APPLICATION:** Primarily for parts such as bushings and spacers requiring a coefficient of expansion approaching that of aluminum alloys.
4. **COMPOSITION:**

		Check Analysis	
		Under Min	or Over Max
Carbon	0.55 - 0.65	0.02	0.02
Manganese	5.00 - 6.00	0.04	0.04
Silicon	1.00 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Nickel	8.50 - 10.50	0.15	0.15

5. **CONDITION:**
 - 5.1 **Bars and Forgings:** Annealed.
 - 5.1.1 Unless otherwise specified, all hexagons, and other bars 2.75 in. and under in diameter or distance between parallel sides shall be cold finished.
 - 5.2 **Forging Stock:** As ordered by the forging manufacturer.
6. **TECHNICAL REQUIREMENTS:**
 - 6.1 **Hardness:** Shall be Brinell 149 - 179, unless otherwise specified.
 - 6.2 **Coefficient of Thermal Expansion:** Material shall be capable of showing a coefficient of thermal expansion not lower than 11.5×10^{-6} per deg Fahr over the temperature range 72 - 600 F.
7. **QUALITY:** Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts.
8. **TOLERANCES:** Unless otherwise specified, tolerances shall conform to the latest issue of AMS 2241 as applicable and as specified below:
 - 8.1 All hexagons, and other bars 2.75 in. and less in diameter or distance between parallel sides, Table I.

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