

STEEL BARS, HIGH EXPANSION
5.5Mn - 9.5Ni (0.55 - 0.65C)
Cold Drawn

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 "A" revision of the subject specification.

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AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 5625A

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

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1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars.
3. **APPLICATION:** Primarily for bolts and screws 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:** Cold drawn.
6. **TECHNICAL REQUIREMENTS:**

6.1 **Tensile Properties:**

Nominal Diameter or Distance between Parallel Sides Inches	Tensile Strength psi, min	Yield Strength at 0.2% Offset or at Extension Indicated (E = 29,000,000)		Elongation % in 4D min	Reduction of Area %, min
		psi, min	in. in 2 in.		
1.00 and under	125,000	100,000	0.0109	16	30
Over 1.00 to 1.063, incl	120,000	90,000	0.0102	16	30

6.2 **Hardness:** Material shall have hardness as follows or equivalent:

Nominal Diameter or Distance Between Parallel Sides Inches	Hardness, Brinell
1.00 and under	255 - 331
Over 1.00 to 1.063, incl	248 - 331

6.3 **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.

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