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AEROSPACE MATERIAL SPECIFICATION

AMS 6542A

Issued 2-15-65
Revised 10-1-82

STEEL BARS, FORGINGS, AND TUBING
0.27Cr - 7.75Ni - 4.0Co - 0.27Mo - 0.09V (0.42 - 0.48C)
Premium Quality, Consumable Electrode Melted, Annealed

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 9-27-72. 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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This specification has been declared "CANCELLED" by the Aerospace Materials Division, SAE, as of 10-1-82. By this action subject specification number and title will be deleted from the active specification index of Aerospace Material Specifications.

This specification is under the jurisdiction of AMS Committee "E".

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AEROSPACE MATERIAL

Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N. Y. 10017

AMS 6542A

Superseding AMS 6542

Issued 2-15-65

Revised 5-1-68

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0.27Cr - 7.75Ni - 4.0Co - 0.27Mo - 0.09V (0.42 - 0.48C)

Premium Quality, Consumable Electrode Melted, Annealed

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. **APPLICATION:** Primarily for ultra-high strength structural applications requiring a weldable material. Material may be used in either bainitic or hardened and tempered condition.
4. **COMPOSITION:**

		min	max
Ø	Carbon	0.42 - 0.48	
	Manganese	0.10 - 0.35	
	Silicon	--	0.10
	Phosphorus	--	0.010
	Sulfur	--	0.010
	Chromium	0.20 - 0.35	
	Nickel	7.00 - 8.50	
	Cobalt	3.50 - 4.50	
	Molybdenum	0.20 - 0.35	
	Vanadium	0.06 - 0.12	
	Copper	--	0.35

- 4.1 **Check Analysis:** Composition variations shall meet the requirements of the latest issue of AMS 2259, paragraph titled "Low Alloy Steels"; check analysis limits for cobalt shall be 0.05 under min or over maximum.
5. **CONDITION:** Unless otherwise ordered, the product shall be supplied in the following condition:
 - 5.1 **Bars:** In a machinable condition and hot finished having hardness not higher than Brinell 341 or equivalent, except that bars ordered cold finished may have hardness as high as Brinell 363 or equivalent.
 - 5.2 **Forgings:** Annealed and descaled, having hardness not higher than Brinell 341 or equivalent.
 - 5.3 **Mechanical Tubing:** In a machinable condition and cold finished having hardness not higher than Rockwell C 37 or equivalent, except that tubing ordered hot finished may have hardness not higher than Rockwell C 40 or equivalent.
 - 5.4 **Forging Stock:** As ordered by the forging manufacturer.
6. **TECHNICAL REQUIREMENTS:** When ASTM methods are specified for determining conformance to the following requirements, tests shall be conducted in accordance with the issue of the ASTM method listed in the latest issue of AMS 2350.
 - 6.1 **Grain Size:** Predominantly 5 or finer with occasional grains as large as 3 permissible, determined, unless otherwise specified, in accordance with ASTM E112, McQuaid-Ehn test.

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