

# AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.  
29 West 39th Street  
New York City

AMS 5721

Issued 7-1-48  
Revised

## STEEL, CORROSION AND HEAT RESISTANT 20Cr - 9Ni - 1.3Mo - 1.3W - Cb - Ti

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars up to and including 1.5 in. in diameter or distance between parallel sides.
3. **APPLICATION:** Parts, such as bolts, dowels and fittings, for use up to 1250 F.
4. **COMPOSITION:**

Check Analysis	
	Under Min or Over Max

Carbon	0.28 - 0.35	0.02	0.02
Manganese	0.75 - 1.50	0.04	0.04
Silicon	0.30 - 0.80	0.05	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	18.00 - 21.00	0.25	0.25
Nickel	8.00 - 11.00	0.15	0.15
Molybdenum	1.00 - 1.60	0.05	0.05
Tungsten	1.00 - 1.70	0.05	0.05
Columbium + Tantalum	0.25 - 0.60	0.05	0.05
Titanium	0.20 - 0.50	0.05	0.05
Tantalum, if determined (0.3xCb) max		--	--
Copper	0.50 max	--	0.03

5. **CONDITION:** Unless otherwise specified, bars shall be hot rolled, with final rolling done at a temperature not lower than 1200 F, and stress relieved at not lower than 1200 F for not less than 4 hours.

6. **TECHNICAL REQUIREMENTS:**

- 6.1 **Physical Properties:** Bars shall conform to the following requirements:

Tensile Strength, psi	120,000 min
Yield Strength at 0.2% offset or at 0.0109 inch in 2 in. extension under load, psi	100,000 min
Elongation, % in 4D	18 min
Reduction of Area, %	35 min
Hardness, Brinell	269-321

7. **QUALITY:** Material shall be uniform in quality and condition, clean, sound, and free from foreign materials and from internal and external defects 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 to hot finished.