

AERONAUTICAL MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
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AMS 5721B

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STEEL, CORROSION AND HEAT RESISTANT
20Cr - 9Ni - 1.4Mo - 1.4W - (Cb+Ta) - Ti

1. **ACKNOWLEDGMENT:** A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.
2. **FORM:** Bars up to and including 1 in. in diameter or distance between parallel sides.
3. **APPLICATION:** Primarily for parts, such as bolts, dowels and fittings, for use up to 1150 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 - 1.75	0.05	0.05
Tungsten	1.00 - 1.75	0.05	0.05
Columbium + Tantalum	0.25 - 0.60	0.05	0.05
Titanium	0.10 - 0.35	0.00	0.05
Copper	0.50 max	--	0.03

5. **CONDITION:** Hot rolled, with final rolling done at a temperature not lower than 1200 F, and stress relieved after final sizing at not lower than 1200 F for not less than 4 hours. Unless otherwise specified, material shall be cold finished for size.

6. TECHNICAL REQUIREMENTS:

6.1 Tensile Properties:

Tensile Strength, psi	120,000 min
Yield Strength at 0.2% Offset or at 0.0102 in. in 2 in. Extension Under Load (E=29,000,000), psi	90,000 min
Elongation, % in 4D	18 min
Reduction of Area, %	35 min

- 6.2 **Hardness:** Material shall have hardness of Brinell 269-321 or equivalent.

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.

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