AERONAUTICAL MATERIAL SPECIFICATION

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

AMS 5613

Issued 3-1-48
Revised

STEEL, CORROSION AND MODERATE HEAT RESISTANT
12Cr

1. ACKNOWLEDGMENT: A vendor shall mention this specification number in all quotations and when acknowledging purchase orders.

2. FORM: Bars, billets, and forgings.

3. APPLICATION: Parts and assemblies, such as compressor wheels and blades, requiring oxidation resistance up to 1000 F, but useful at the higher temperatures only when stresses are low.

4. COMPOSITION:

		Check Analysis Under Min	Check Analysis Over Max
Carbon	0.06 - 0.13	0.01	0.01
Manganese	0.25 - 0.80	0.03	0.03
Silicon	0.50 max	--	0.05
Phosphorus	0.040 max	--	0.005
Sulfur	0.030 max	--	0.005
Chromium	11.50 - 13.00	0.15	0.15
Nickel	0.50 max	--	0.03
Molybdenum	0.50 max	--	0.03
Copper	0.50 max	--	0.03
Tin	0.05 max	--	--
Aluminum	0.15 max	--	--

5. CONDITION: (a) Annealed, unless otherwise specified.

(b) Unless otherwise specified, bars and rods 2.75 in. and less in diameter and all hexagons shall be cold finished.

(c) Forging stock shall be supplied as ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS: (a) Hardness.- The product shall have hardness not higher than Brinell 241 or equivalent.

(b) Hardenability.- Material shall be capable of meeting the following test:

Specimens 3/8 in. thick, cut from a bar or forging, shall be heated to 1750 F ± 10, held for 30 minutes and cooled in still air. Hardness of such specimens shall be Rockwell C 32 - 42.

7. QUALITY: The product 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.