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

AMS 5613 D

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STEEL, CORROSION AND MODERATE HEAT RESISTANT 12.5Cr (SAE 51410)

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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, forgings, forging stock, and mechanical tubing.

3. APPLICATION: Primarily for 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:

Carbon	0.15 max
Manganese	1.00 max
Silicon	1.00 max
Phosphorus	0.040 max
Sulfur	0.030 max
Chromium	11.50 - 13.50
Nickel	0.75 max
Molybdenum	0.50 max
Aluminum	0.05 max
Copper	0.50 max
Tin	0.05 max

4.1 Check Analysis: Composition variations shall meet the requirements of the latest issue of AMS 2248.

5. CONDITION:

5.1 Bars: Unless otherwise specified, all hexagons, and other bars 2.75 in. and under in diameter or distance between parallel sides shall be cold finished. ø Bars other than hexagons over 2.75 in. in diameter or distance between parallel sides shall be hot finished. All bars shall have hardness not higher than Brinell 241 or equivalent.

5.2 Mechanical Tubing: Cold finished, having hardness not higher than Brinell 241 or equivalent.

5.3 Forgings: As ordered.

5.4 Forging Stock: As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

6.1 Hardenability: Material 0.375 in. and less in thickness and 0.375 in. thick ø specimens cut from larger bars, tubes, and forgings when placed in a furnace which is at 1750 F ± 10, allowed to heat to 1750 F ± 10, held at heat for 30 min., and cooled in still air, shall conform to the following requirements:

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