

AERONAUTICAL MATERIAL SPECIFICATION

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

AMS5752

Issued 11-1-48

Revised

ALLOY, CORROSION AND HEAT RESISTANT
Nickel Base - 28Mo - 5Fe - 0.35V

CANCELLED

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 shafts, buckets, blades, and bolts, requiring high strength and oxidation resistance up to 1400 F.
4. **COMPOSITION:**

Check Analysis			
Under Min or Over Max			
Carbon	0.12 max	--	0.01
Manganese	1.00 max	--	0.03
Silicon	1.00 max	--	0.05
Phosphorus	0.050 max	--	0.005
Sulfur	0.050 max	--	0.005
Nickel + Cobalt	62.50 - 68.50	0.20	0.20
Cobalt, if determined	1.00 max	--	--
Molybdenum	26.00 - 30.00	0.10	0.10
Iron	4.00 - 6.00	--	--
Vanadium	0.25 - 0.50	0.01	0.01

5. **CONDITION:** Unless otherwise specified, the product shall be supplied in the following condition:

- 5.1 **Bars:** Hot rolled, solution heat treated, and centerless ground.
- 5.2 **Forgings:** Solution heat treated and anodically pickled.
- 5.3 **Forging Stock:** As ordered by the forging manufacturer.

6. TECHNICAL REQUIREMENTS:

- 6.1 **Solution Heat Treatment:** Unless otherwise specified, bars, excluding forging stock, and forgings shall be solution heat treated by heating at 1900 F $\pm$ 10 for 24 hours and air cooling.
- 6.2 **Grain Size:** Unless otherwise specified, the average grain size of material heat treated as in 6.1 shall be 4-8, inclusive, in accordance with grain size chart in ASTM E19-46.
- 6.3 **Hardness (Bars only):** Brinell 210-285 or equivalent.



Documents

Document Sharing Hub

- 6.4 Physical Properties at 1500 F: Tensile test specimens cut from bars and forgings, or from forging stock heat treated in accordance with 6.1, heated to $1500\text{ F} \pm 10$, held at $1500\text{ F} \pm 10$ for 30 minutes before testing, and tested at $1500\text{ F} \pm 10$ at a rate of $0.045 - 0.062$ in. per minute, shall conform to the following requirements:

Tensile Strength, psi	60,000 min
Elongation, % in 4D	10 min

7. QUALITY: Material shall be uniform in quality and condition, clean, and 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 for bars shall conform to the latest issue of AMS 2241 as applicable to cold finished.
9. REPORTS:
- 9.1 Unless otherwise specified, the vendor of the product shall furnish with each shipment three copies of a notarized report of the results of tests for chemical composition of each heat in the shipment. This report shall include the purchase order number, heat number, material specification number, size, and quantity from each heat. If forgings are supplied, the part number and size of stock used to make the forgings shall also be included.
- 9.2 Unless otherwise specified, the vendor of finished or semi-finished parts shall furnish with each shipment three copies of a notarized report showing the purchase order number, material specification number, contractor or other direct supplier of material, part number, and quantity. When material for making parts is produced or purchased by the parts vendor, that vendor shall inspect each lot of material to determine conformance to the requirements of this specification, and shall include in the report a certification that the material conforms, or shall include copies of laboratory reports showing the results of tests to determine conformance.
10. IDENTIFICATION:
- 10.1 Individual pieces or bundles shall have attached a metal tag stamped with the purchase order number, AMS 5752, nominal size, and heat number, or shall be boxed and the box marked with the same information. In addition to the above identification, flats 2×1 in. and larger and other bars 1 in. and over in diameter or distance between parallel sides shall be stamped with the heat number within 2 in. of one end.
- 10.2 Forgings shall be identified in accordance with the latest issue of AMS 2808.
11. REJECTIONS: Material not conforming to this specification or to authorized modifications will be subject to rejection. Unless otherwise stipulated, rejected material and parts will be returned to vendor at vendor's expense, unless purchaser receives, within three weeks of notification of rejection, other instructions for disposition.