AEROSPACE MATERIAL SPECIFICATION

AMS5663™	REV. P

Issued 1965-09
Reaffirmed 2009-06
Revised 2022-08

Superseding AMS5663N

Nickel Alloy, Corrosion- and Heat-Resistant, Bars, Forgings, Rings, and Stock for Forgings and Rings 52.5Ni - 19Cr - 3.0Mo - 5.1Cb (Nb) - 0.90Ti - 0.50Al - 18Fe Consumable Electrode or Vacuum Induction Melted 1775 °F (968 °C) Solution and Precipitation Heat Treated (Composition similar to UNS N07718)

RATIONALE

AMS5663P is the result of a Five-Year Review and update of the specification. The revision prohibits unauthorized exceptions (3.5.1.6, 3.9, 4.4.2, 5.2.1.1, 8.5), updates title to match the scope, updates the description of size and size limits (1.1, 3.5.1.1, 3.5.1.3, Tables 2 and 3, 3.5.1.5.1), revises composition requirement and reporting (3.1, 3.1.1), provides for consistent heat treatment requirements between similar specs and global market (3.1.2, 4.1.3), clarifies transverse testing requirements (3.5.1.3.4), clarifies limitations on producing bar from plate (4.4.1.5), adds strain rate control during testing (3.5.1.3.6), adds forging stock options (4.4.3, 8.6), and allows prior revisions (8.4).

1. SCOPE

1.1 Form

This specification covers a corrosion- and heat-resistant nickel alloy in the form of bars, forgings, and flash welded rings in the solution and precipitation heat treated condition. Product covered by this specification is limited to 10.00 inches (254 mm) and under in nominal diameter or maximum cross-sectional dimension between parallel sides (thickness) and nominal cross sectional area of 78.54 in^2 (503 cm^2). Stock may be of any size for forging or flash welded rings.

1.2 Application

These products have been used typically for parts requiring high resistance to creep and stress-rupture up to 1300 °F (704 C) and oxidation resistance up to 1800 °F (982 °C), but usage is not limited to such applications.

2. APPLICABLE DOCUMENTS

The issue of the following documents in effect on the date of the purchase order forms a part of this specification to the extent specified herein. The supplier may work to a subsequent revision of a document unless a specific document issue is specified. When the referenced document has been cancelled and no superseding document has been specified, the last published issue of that document shall apply.

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For more information on this standard, visit
https://www.sae.org/standards/content/AMS5663P/