Society of Automotive Engineers, Inc.
400 COMMONWEALTH DRIVE, WARRENDALE, PA. 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 5788A
Superseding AMS 5788

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UNS R30006

COATING ALLOY, CORROSION AND HEAT RESISTANT
62Co - 28Cr - 4.5W

1. SCOPE:

1.1 Form: This specification covers a corrosion and heat resistant cobalt alloy in the form of cast rods.

1.2 Application: Primarily for use as a corrosion and heat resistant hard coating.

2. APPLICABLE DOCUMENTS: The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications (AMS) shall apply. The applicable issue of other documents shall be as specified in AMS 2350.

2.1 SAE Publications: Available from Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

2.1.1 Aerospace Material Specifications:

AMS 2350 - Standards and Test Methods

2.2 ASTM Publications: Available from American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

ASTM E354 - Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt-Base Alloys

2.3 Government Publications: Available from Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120.

2.3.1 Federal Standards:

Federal Test Method Standard No. 151 - Metals; Test Methods

2.3.2 Military Standards:

MIL-STD-794 - Parts and Equipment, Procedures for Packaging and Packing of

3. TECHNICAL REQUIREMENTS:

3.1 Composition: Shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E354, by spectrographic methods in accordance with Federal Test Method Standard No. 151, Method 112, or by other approved analytical methods:

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	min	max
Carbon	0.90 -	1.40
Manganese	--	0.50
Silicon	0.70 -	1.50
Chromium	26.00 -	30.00
Tungsten	3.50 -	5.50
Nickel	--	3.00
Molybdenum	--	1.00
Iron	--	3.00
Cobalt	remainder	

3.2 Condition: As cast and centerless ground.

3.3 Properties: Rods shall melt quickly, shall flow freely without bubbling or boiling, and shall produce an adherent deposit free from porosity due to blowholes, gas cavities, or slag inclusions.

3.4 Quality: Rods shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to coating operations or to properties of the deposited alloy.

3.5 Tolerances: Unless otherwise specified, tolerances shall conform to the following:

3.5.1 Diameter:

Nominal Diameter		Tolerance Plus and minus	
Inch	Millimetres	Inch	Millimetre
0.031 to 0.062, incl	(0.79 to 1.57, incl)	0.005	(0.13)
Over 0.062 to 0.125, incl	(Over 1.57 to 3.18, incl)	0.010	(0.25)
Over 0.125	(Over 3.18)	0.031	(0.79)

3.5.2 Concentricity: When lengths are supplied as welded composites of cast lengths, the diameters of adjacent sections shall be concentric within the diametral tolerances specified in 3.5.1.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for Inspection: The vendor of rods shall supply all samples and shall be responsible for performing all required tests. Results of such tests shall be reported to the purchaser as required by 4.4. Purchaser reserves the right to perform such confirmatory testing as he deems necessary to ensure that the rods conform to the requirements of this specification.

4.2 Classification of Tests: Tests to determine conformance to all technical requirements of this specification are classified as acceptance or routine control tests.

4.3 Sampling: Shall be in accordance with the following:

4.3.1 Two chemical analysis specimens from each melt. When heats are of such size as to make analysis of each heat impractical, the heats produced in an 8-hr day may be grouped together as a lot and the lot sampled for analysis.

4.4 Reports:

4.4.1 The vendor of rods shall furnish with each shipment three copies of a report of the results of tests for chemical composition of each heat or lot in the shipment. This report shall include the purchase order number, heat number, material specification number and its revision letter, size, and quantity from each heat.