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400 COMMONWEALTH DRIVE, WARRENDALE, PA 15096

AEROSPACE MATERIAL SPECIFICATION

AMS 5788B
Superseding AMS 5788A

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COATING ALLOY, CORROSION AND HEAT RESISTANT
62Co - 29Cr - 4.5W

UNS R30006

1. SCOPE:

1.1 Form: This specification covers a corrosion and heat resistant cobalt alloy in the form of welding or coating rods and tubular wire.

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 SAE, 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 Alloys

2.3 U.S. 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 analytical methods approved by purchaser:

	min	max
Carbon	0.90	1.40
Manganese	--	0.50
Silicon	--	2.00
Chromium	26.00	32.00
Tungsten	3.00	6.00
Nickel	--	3.00
Molybdenum	--	1.00
Iron	--	3.00
Cobalt	remainder	

3.2 Condition: As cast, cast and centerless ground, wrought, or tubular wire, as Ø specified.

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, as received by purchaser shall be uniform in quality and Ø 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 Sizes and Tolerances: Unless otherwise specified, rod shall be supplied in Ø the sizes and to the tolerances shown in 3.5.1 and 3.5.2.

3.5.1 Diameter:

3.5.1.1 Cast and Centerless Ground, Wrought, or Tubular Wire:

Nominal Diameter				Tolerances Plus and Minus	
Inch		Millimetres		Inch	Millimetre
	0.031 to 0.062, incl		0.75 to 1.50, incl	0.005	0.12
Over	0.062 to 0.125, incl	Over	1.50 to 3.00, incl	0.010	0.25
Over	0.125	Over	3.00	0.031	0.75

3.5.1.2 As Cast:

Ø

Nominal Diameter		Tolerance Plus and Minus	
Inch	Millimetres	Inch	Millimetres
1/16 and Over	1.6 and Over	1/32	0.8

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 for vendor's tests and shall be responsible for performing all required Ø tests. Results of such tests shall be reported to the purchaser as required by 4.4. Purchaser reserves the right to sample and to perform any confirmatory testing deemed 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 tests and shall be performed on each heat or lot as applicable.

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 showing the results of tests for chemical composition of each heat Ø or lot in the shipment and stating that the rods conform to the other technical requirements of this specification. This report shall include the purchase order number, heat or lot number, AMS 5788B, size, and quantity from each heat.

4.4.2 When parts made of this coating alloy or assemblies requiring use of this coating alloy are supplied, the part or assembly manufacturer shall inspect each lot of alloy to determine conformance to the requirements of this specification and shall furnish with each shipment three copies of a report stating that the rods conform. This report shall include the purchase order number, AMS 5788B, part or assembly number, and quantity.

4.5 Resampling and Retesting: If any specimen used in the above tests fails to meet the specified requirements, disposition of the rods may be based on the results of testing three additional specimens for each original nonconforming specimen. Failure of any retest specimen to meet the specified requirements shall be cause for rejection of the rods represented and no additional testing shall be permitted. Results of all tests shall be reported.

5. PREPARATION FOR DELIVERY:

5.1 Packaging and Marking:

5.1.1 Packages of rods shall be prepared for shipment in accordance with commercial practice and in compliance with applicable rules and regulations pertaining to the handling, packaging, and transportation of the rods to ensure carrier acceptance and safe delivery. Packaging shall conform to carrier rules and regulations applicable to the mode of transportation.

5.1.2 Each package shall be marked with not less than the following information:

COATING ALLOY, CORROSION AND HEAT RESISTANT
AMS 5788B
HEAT (or LOT) NUMBER_____
SIZE_____
QUANTITY_____
PURCHASE ORDER NUMBER_____
MANUFACTURER'S IDENTIFICATION_____

5.1.3 For direct U.S. Military procurement, packaging shall be in accordance with MIL-STD-794, Level A or Level C, as specified in the request for procurement. Commercial packaging as in 5.1.1 will be acceptable if it meets the requirements of Level C.

6. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

7. REJECTIONS: Rods not conforming to this specification or to modifications authorized by purchaser will be subject to rejection.

8. NOTES:

8.1 Marginal Indicia: The phi (Ø) symbol is used to indicate technical changes from the previous issue of this specification.