



400 Commonwealth Drive, Warrendale, PA 15096-0001

AEROSPACE MATERIAL SPECIFICATION

Submitted for recognition as an American National Standard



AMS 5677D

Issued	JUN 1953
Revised	JAN 1987
Noncurrent	JUL 1992
Cancelled	MAR 1999
Superseding	AMS 5677C

Alloy, Corrosion and Heat Resistant, Covered Welding Electrodes
75Ni - 19.5Cr - 1.6(Cb +Ta)

UNS N06003

CANCELLATION NOTICE

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1. SCOPE:

1.1 Form:

This specification covers a corrosion and heat resistant nickel alloy in the form of covered welding electrodes.

1.2 Application:

Primarily for shielded-metal-arc welding of parts fabricated from material 1.8 in. (3 mm) and under in nominal thickness of similar or dissimilar composition, particularly when the weld zone is required to have corrosion and heat resistance comparable to that of the parent metal.

1.3 Classification:

Electrodes covered by this specification are classified as follows and shall be suitable for the following usability characteristics:

Type Designation	AWS Designation	Weld Position	Current
A	-15	Flat, Vertical, Overhead, and Horizontal	DC
B	-16	Flat, Vertical, Overhead, and Horizontal	DC - AC
C	-15	Horizontal Fillets, Flat	DC
D	-16	Horizontal Fillets, Flat	DC - AC

1.3.1 When DC is specified, reverse polarity (electrode positive) is required.

1.3.2 Type "A" electrodes shall be supplied unless another type is ordered.

2. APPLICABLE DOCUMENTS:

The following publications form a part of this specification to the extent specified herein. The latest issue of Aerospace Material Specifications 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 Alloys

2.3 Government Publications:

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

2.3.1 Military Specifications:

MIL-W-10430 - Welding Rods and Electrodes; Preparation for Delivery of

2.4 AWS Publications:

Available from American Welding Society, Inc., P.O. Box 351040, Miami, FL 33135.

AWS A5.11 - Nickel and Nickel Alloy Covered Welding Electrodes

3. TECHNICAL REQUIREMENTS:

3.1 Composition:

Weld metal deposited from electrodes shall conform to the following percentages by weight, determined by wet chemical methods in accordance with ASTM E354 or by spectrographic or other analytical methods approved by purchaser:

	min	max
Carbon	--	0.15
Manganese	--	1.5
Silicon	--	0.75
Sulfur	--	0.015
Chromium	18.0	21.0
Nickel + Cobalt	71.0	--
Columbium + Tantalum	1.0	2.2
Cobalt (3.1.1)	--	1.0
Iron	--	4.0