

AEROSPACE MATERIAL SPECIFICATION

SAE

AMS 5781D

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Superseding AMS 5781C

Steel Welding Electrodes, Covered, Corrosion and Moderate Heat Resistant
15.5Cr - 4.5Ni - 2.9Mo - 0.10N

UNS W35510

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1. SCOPE:

1.1 Form:

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

1.2 Application:

Primarily for shielded metal-arc welding of parts fabricated from steels of similar composition, particularly when the weld zone is required to have strength and corrosion and heat resistance comparable to those of the parent metal.

1.3 Classification:

The electrodes covered by this specification are classified as follows:

Type A - DC (AWS-15)
Type B - DC-AC (AWS-16)

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

1.3.2 If no type is specified, Type A shall be supplied.

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 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 E353 Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel-Iron 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 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 A5.4 Corrosion-Resisting Chromium and Chromium-Nickel Steel 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 E353 or by spectrographic or other analytical methods approved by purchaser:

	min	max
Carbon	0.10	0.15
Manganese	0.50	1.25
Silicon	--	0.50
Phosphorus	--	0.040
Sulfur	--	0.030
Chromium	15.00	16.00
Nickel	4.00	5.00
Molybdenum	2.50	3.25
Nitrogen	0.07	0.13
Copper	--	0.50

3.1.1 Weld Pads for Chemical Analysis: The referee procedure for making pads of weld metal and removing samples for chemical analysis shall be AWS A5.4.

3.2 Properties:

Electrodes shall conform to the following requirements: