

AEROSPACE RECOMMENDED PRACTICE

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Superseding ARP4926

Alloy Verification and Chemical Composition Inspection of Welding Wire

1. SCOPE:

This SAE Aerospace Recommended Practice (ARP) covers procedures for welding wire verification and conformance to specification composition.

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 canceled and no superseding document has been specified, the last published issue of that document shall apply.

2.1 ASTM Publications:

Available from ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 15248-2959 or www.astm.org.

ASTM E 34	Chemical Analysis of Aluminum and Aluminum-Base Alloys
ASTM E 120	Chemical Analysis of Titanium and Titanium Alloys
ASTM E 350	Chemical Analysis of Carbon Steel, Low-Alloy Steel, Silicon Electrical Steel, Ingot Iron, and Wrought Iron
ASTM E 353	Chemical Analysis of Stainless, Heat-Resisting, Maraging, and Other Similar Chromium-Nickel Iron Alloys
ASTM E 354	Chemical Analysis of High-Temperature, Electrical, Magnetic, and Other Similar Iron, Nickel, and Cobalt Alloys

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SAE ARP4926 Revision A

3. TECHNICAL REQUIREMENTS:

3.1 Chemical Composition Tests:

Chemical analysis to determine conformance of the wire to applicable procurement specification requirements shall be by wet chemical methods in accordance with ASTM E 34, ASTM E 120, ASTM E 350, ASTM E 353, or ASTM E 354, by spectrochemical methods, or by other analytical methods acceptable to purchaser. Wire shall be in the finished diameter form when analyzed. (See 6.1.)

3.2 Alloy Verification Tests:

Thermoelectric, eddy current, or comparative spectroscopy shall be used to determine that the welding wire has not been mixed or misidentified. (See 6.1.) The alloy verification test method shall be capable of distinguishing the alloy from all other alloys processed within the facility. Testing shall be performed at receiving inspection, during any in-process welding, and at final inspection operations (see 4.3.2 through 4.3.5).

3.2.1 Calibration and operation standards for alloy verification test methods shall be in accordance with the apparatus manufacturer's requirements and shall be acceptable to purchaser of the wire.

3.2.2 When multiple tests are used to distinguish the desired alloy from other alloys, tests shall be performed on the same samples utilizing the same sampling plan.

4. QUALITY ASSURANCE REQUIREMENTS:

4.1 Responsibility for Inspection:

The supplier of the welding wire shall be responsible for the performance of all required tests and to ensure that alloy verification and composition have been maintained in accordance with an established quality system.

4.2 Identification Controls

4.2.1 Records of work performed, such as work instructions and travelers, shall be kept throughout the manufacturing process to maintain lot identity through all operations.

4.2.2 Records shall account for the disposition of the material during all stages of manufacturing, including subcontract operations, to the extent necessary to preclude misidentification.

4.2.3 Wire stock and finished wire shall be identified at all times with the alloy specification number, heat and/or lot number, and the work order number or control number. Identification methods shall be selected and controlled to prevent the loss of identification at all times throughout processing, transportation, handling, and storage.