



AEROSPACE MATERIAL SPECIFICATION

AMS2436™**REV. E**

Issued 1960-01
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Revised 2022-02

Superseding AMS2436D

Coating, Aluminum Oxide
Detonation Deposition

RATIONALE

AMS2436E results from a Five-Year Review and update of this specification with the addition of Ordering Information, updated paragraphs for Microscopic Examination (3.5.4), updated Acceptance Tests (4.2.1), updated Periodic Tests (4.2.2), new definition of lot per GAB16AA (4.3), combined Test Specimens paragraphs (4.3.1), and Purchase documents (8.3) moved to Ordering Information. No technical changes were made.

NOTICE

ORDERING INFORMATION: The following information shall be provided to the coating processor by the purchaser.

1. Purchase order shall specify not less than the following:

- AMS2436E
- Quantity of pieces to be plated
- Basis metal to be plated
- Finished coating thickness desired (3.5.1)

2. Parts manufacturing operations, such as heat treatment, forming, joining, and media finishing, can affect the condition of the substrate for coating, or if performed after coating, could adversely affect the coating. The sequencing of these types of operations should be specified by the cognizant engineering organization and is not controlled by this specification.

1. SCOPE

1.1 Form

This specification covers the engineering requirements for applying aluminum oxide to metal parts by detonation deposition and the properties of such coatings.

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Documents

Document Sharing Hub

1.2 Application

This process has been used typically to provide a hard, wear-resistant surface on metal parts, particularly those used under corrosive or elevated-temperature oxidizing conditions, but usage is not limited to such applications. This coating is not recommended for surfaces with deep vee-shaped grooves, blind cavities, narrow holes, or sharp corners, or where deformation of the basis metal may be expected.

1.3 Safety - Hazardous Materials

While the materials, methods, applications, and processes described or referenced in this specification may involve the use of hazardous materials, this specification does not address the hazards which may be involved in such use. It is the sole responsibility of the user to ensure familiarity with the safe and proper use of any hazardous materials and to take necessary precautionary measures to ensure the health and safety of all personnel involved.

2. REFERENCES

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

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AS7766 Terms Used in Aerospace Metals Specifications

2.1.2 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM C633 Adhesion or Cohesive Strength of Thermal Spray Coatings

ASTM E384 Microindentation Hardness of Materials

2.2 Definitions

Terms used in AMS specifications are stated in AS7766.

3. TECHNICAL REQUIREMENTS

3.1 Equipment

Shall consist of a specially constructed machine in which the particles of coating compound are fed into the tube of a gun, suspended in a mixture of oxygen, acetylene, and nitrogen, and detonated, heating the particles to plasticity, and propelling them at high velocity out of the gun barrel onto the part.

3.2 Coating Compound

Shall consist of not less than 99% aluminum oxide, determined by a method acceptable to the cognizant engineering organization.

3.3 Preparation

3.3.1 Surfaces to be coated shall be machined to allow for the finished thickness of the coating

