



AEROSPACE MATERIAL SPECIFICATION

AMS03™-28**PART 2A**Issued 2015-05
Stabilized 2017-10

Superseding AMS03-28PT2

Physical Vapor Deposition of Metals: Physical Vapor Deposition of Cadmium
for Protection Against Corrosion

RATIONALE

AMS03-28PT2A stabilizes this document because this document contains mature technology that is not expected to change and thus no further revisions are anticipated.

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AMS Committee B recommends that the following similar (e.g., properties, fit, form, function) specifications be considered for future procurement. This listing does not constitute authority to substitute these specifications for the "STABILIZED" specification.

AMS2426 Coating, Cadmium Vacuum Deposition

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FOREWORD

REVISION NOTE

This Defence Standard was raised to Issue 4 to update its content and incorporate the latest MoD/DStan policy in place at the time.

HISTORICAL RECORD

This standard supersedes the following:

Def Stan 03-28 (Part 2) Issue 1 dated 1 September 1988

Def Stan 03-28 (Part 2) Issue 2 dated 27 January 1995

Def Stan 03-28 (Part 2) Issue 3 dated 14 October 2005

INTRODUCTION

Physical vapor deposited cadmium is applied to improve resistance to corrosion, as an alternative to electroplated cadmium, to avoid the introduction of hydrogen which occurs during electroplating. However hydrogen can still be introduced into the substrate during fabrication, cleaning, pickling and other treatments prior to physical deposition.

Though this standard refers to the use of Cadmium, it should be noted that in accordance with MOD Policy and UK Environmental (Control of Hazardous Substances) No. 2 Regulation 1993, Cadmium is only to be used where specific agreement has been given by the MOD. Every effort must be made to define alternative coatings and Cadmium is only to be used where its use is permitted by regulation and no other acceptable alternative is available.

Def Stan 03-36 gives guidance on the available cadmium alternatives along with a methodology for selecting the most appropriate coating.

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1. SCOPE

This SAE Standard covers the requirements for the deposition of cadmium coatings on carbon steel, low alloy steels, high strength steels, corrosion resisting steels and other materials where appropriate.

2. WARNING

This section which appeared in DEF STAN 03-28 Part 2 Issue 4 has been deliberately deleted.

3. NORMATIVE REFERENCES

3.1 The publications shown below are referred to in the text of this standard. Publications are grouped and listed in alpha-numeric order.

BS EN ISO 9227	Corrosion Tests In Artificial Atmospheres. Salt Spray Tests.
BS EN 60454-2	Pressure Sensitive Adhesive Tapes for Electrical Purposes. Methods of Test.
BS ISO 6344-1	Coated Abrasives – Grain Size Analysis. Grain Size Distribution Test
BS 6338	Specification for Chromate Conversion Coatings on Electroplated Zinc and Cadmium Coatings
Def Stan 03-2	Cleaning and Preparation of Metal Surfaces
AMS03-2	Cleaning and Preparation of Metal Surfaces
Def Stan 03-4	The Pretreatment and Protection of Steel of Specified Maximum Tensile Strength Exceeding 1450 N/mm ²
AMS03-4	The Pretreatment and Protection of Steel of Specified Maximum Tensile Strength Exceeding 1450 N/mm ²
Def Stan 03-21	Mechanical Methods for the Inducement of Compressive Surface Residual Stresses
Def Stan 03-36	Guidance on the use of Cadmium Alternatives in the Protective Coating of Defence Equipment

3.2 This section which appeared in DEF STAN 03-28 Part 2 Issue 4 has been deliberately deleted.

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4. DEFINITIONS

4.1 For the purposes of this Part of the Standard the following definitions apply:

4.2 DESIGN AUTHORITY

The approved firm, establishment or branch responsible for the detailed design of material to approved specifications and authorized to sign a certificate of design or to certify sealed drawings.

4.3 PROCESS CONTROL SCHEDULE

The document which specifies/defines:

- The sequence of manufacturing operations and processes.
- The control parameters and their tolerances for each individual process within the total sequence.