

BS EN 4473:2010



BSI Standards Publication

Aerospace series — Aluminium pigmented coatings for fasteners — Technical specification

bsi.

...making excellence a habit.
AVA Documents™
Document Sharing Hub

National foreword

This British Standard is the UK implementation of EN 4473:2010.

The UK participation in its preparation was entrusted to Technical Committee ACE/12, Aerospace fasteners and fastening systems.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© BSI 2010

ISBN 978 0 580 65104 5

ICS 49.040

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 30 September 2010.

Amendments issued since publication

Date	Text affected
------	---------------

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4473

September 2010

ICS 49.040

English Version

**Aerospace series - Aluminium pigmented coatings for fasteners
- Technical specification**

Série aérospatiale - Revêtements aluminés pour
fixations - Spécification technique

Luft- und Raumfahrt - Aluminium pigmentierte
Beschichtungen für Fixierungen - Technische
Lieferbedingungen

This European Standard was approved by CEN on 5 May 2010.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

© 2010 CEN All rights of exploitation in any form and by any means reserved
worldwide for CEN national Members.

Ref. No. EN 4473:2010: E

AVA Documents
Document Sharing Hub

Contents

Page

Foreword	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Technical specifications	6
4.1 Product	6
4.2 Product composition	6
4.3 Product application	6
5 Quality assurance	6
5.1 Qualification	6
5.2 Acceptance	6
6 Requirements	6
Annex A (normative) Test coupons for paint adhesion test	12
Annex B (normative) Test specimen for ohmic resistance measurement	13
Annex C (normative) Lightning current simulation and swept lightning	14
C.1 Lightning current simulation	14
C.2 Test specimens distribution	14
C.3 Swept lightning (on countersunk head fastener)	14
C.3.1 Current waveforms	14
C.3.2 Test method	15
C.3.3 Specimens	15
C.4 Lightning current transfer condition (on protruding head fastener)	15
C.4.1 Current waveforms	15
C.4.2 Test method	16

Foreword

This document (EN 4473:2010) has been prepared by the Aerospace and Defence Industries Association of Europe - Standardization (ASD-STAN).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of ASD, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by March 2011, and conflicting national standards shall be withdrawn at the latest by March 2011.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

1 Scope

This European Standard defines the qualification test conditions for aluminium pigmented coatings applicable to fasteners in titanium, titanium alloys, nickel base alloys and corrosion resisting steels. The aluminium pigmented coatings are not applicable to fasteners in non-corrosion resistant steels.

Temperature class: 315 °C ¹⁾

Type I : Coating with chromate and a cetyl alcohol lubricant.

Type II : Coating without chromate and an cetyl alcohol lubricant.

Type III : Coating with chromate, no additional lubricant.

Type IV : Coating without chromate, no additional lubricant.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 2409, *Paints and varnishes — Cross-cut test*

ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

EN ISO 2812-1, *Paints and varnishes — Determination of resistance to liquids — Part 1: Immersion in liquids other than water (ISO 2812-1:2007)*

EN 4474, *Aerospace series — Aluminium pigmented coatings — Coating methods*

EN 6117, *Specification for bolts with cetyl alcohol* ²⁾

EN 9133, *Aerospace series — Quality management systems — Qualification Procedure for Aerospace Standards Parts*

TR 4676, *Aluminium pigmented coatings — List of commercial products* ³⁾

NASM 1312-5, *Fastener Test Methods; Method 5: Stress durability* ⁴⁾

NASM 1312-12, *Fasteners Test Methods, Method 12: Thickness of metallic coatings* ⁴⁾

MIL-A-8625, *Anodic coatings for aluminium and aluminium alloys* ⁵⁾

1) Maximum operating temperature.

2) Published as ASD Prestandard at the date of publication of this standard.

3) Published as ASD Technical Report at the date of publication of this standard.

4) Published by: Aerospace Industries Association, 1000 Wilson Boulevard, Suite 1700, Arlington, VA 22209-3928, USA.

5) Published by: Department of Defense (DOD), the Pentagon, Washington, D.C. 20301 USA.