



SLOVENSKI STANDARD

SIST EN 4508:2009

01-julij-2009

Aeronavtika - Barve in laki - Preskusne metode za protizdrsne premaze - Ugotavljanje obnašanja trenja pri drsenju

Aerospace series - Paints and varnishes - Test method for anti slip coatings - Determination of the sliding friction behaviour

Luft- und Raumfahrt - Anstrichstoffe - Prüfverfahren für tritt- und rutschfeste Beschichtungen - Bestimmung des Gleitreibungsverhaltens

Série aérospatiale - Peintures et vernis - Méthode d'essai pour peinture antidérapante - Détermination comportement au glissement avec friction

[https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-](https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009)

Ta slovenski standard je istoveten z: EN 4508:2006

ICS:

49.040	Preveleke in z njimi povezani postopki, ki se uporabljajo v letalski in vesoljski industriji	Coatings and related processes used in aerospace industry
--------	--	---

SIST EN 4508:2009

en,de

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 4508:2009

<https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4508

July 2006

ICS 49.040

English Version

Aerospace series - Paints and varnishes - Test method for anti slip coatings - Determination of the sliding friction behaviour

Série aérospatiale - Peintures et vernis - Méthode d'essai pour peinture antidérapante - Détermination du comportement au glissement avec friction

Luft- und Raumfahrt - Anstrichstoffe - Prüfverfahren für tritt- und rutschfeste Beschichtungen - Bestimmung des Gleitreibungsverhaltens

This European Standard was approved by CEN on 6 January 2006.

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 Central Secretariat 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, 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.

[SIST EN 4508:2009](https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009)

<https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009>



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents		Page
0	Introduction	4
1	Scope	4
2	Normative references	4
3	Definitions	4
3.1	Sliding friction coefficient μ	4
4	Principle of the method.....	4
5	Designation of the method	4
6	Apparatus	4
7	Test specimen	5
7.1	Manufacture of test panels	5
7.2	Preparation of test specimens	5
7.3	Number of specimens	5
8	Procedure	5
9	Presentation of the results	5
9.1	Friction coefficient.....	5
9.2	Requirement.....	6
10	Test report	6

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 4508:2009](https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009)

<https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009>

Foreword

This European Standard (EN 4508:2006) has been prepared by the European Association of Aerospace Manufacturers - Standardization (AECMA-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 AECMA, 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 January 2007, and conflicting national standards shall be withdrawn at the latest by January 2007.

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, 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.

ITeH STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 4508:2009](https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009)

<https://standards.iteh.ai/catalog/standards/sist/c6a1a8a1-a8f5-437e-9691-e4dfb3fe6b0a/sist-en-4508-2009>

EN 4508:2006 (E)

0 Introduction

Not applicable.

1 Scope

This standard specifies the procedure for determination of the sliding friction behaviour of an anti slip coating.

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.

EN 2090, *Aerospace series — Aluminium alloy AL-P2024- — T3 — Clad sheet and strip — $0,3\text{ mm} \leq a \leq 6\text{ mm}$*

AMS 3200, *Butadiene acrylonitrile (NBR) rubber petroleum-base hydraulic fluid resistant 55 – 65* ¹⁾

ASTM-D 471, *Standard test method for rubber property — Effect of liquids* ²⁾

3 Definitions

3.1 Sliding friction coefficient μ

The sliding friction coefficient μ is the ratio between the sliding friction load achieved by the specific test and the mass of the sliding block.

4 Principle of the method

Not applicable.

5 Designation of the method

Not applicable.

6 Apparatus

6.1 Calibrated tensile test machine accurate within 1 %, equipped with facilities to record load path diagram. The tensile test machine shall allow a speed of 500 mm/min.

6.2 Plane support plate from constructional steel, reinforced with angle steel profiles, to which the coated specimen according to Clause 7 is fixed or clamped (see Figure 1).

6.3 Sliding block with a mass of 5 kg and a base of 100 mm × 50 mm. Five strips of NBR rubber according to AMS 3200 and 5 mm width shall be symmetrically arranged in longitudinal direction of the sliding block considering a distance between the strips of 5 mm. For adhesive bonding of the strips to the sliding block an adequate adhesive shall be used (see Figure 1).

1) Published by: Society of Automotive Engineers, Inc. (SAE), 400 Commonwealth Drive, Warrendale, PA15096-001 USA.

2) Published by: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, USA.

6.4 Smoothly running deflection pulley with diameter 130 mm fixed to the plane support plate with an angle of 90° (see Figure 1).

6.5 Cable which connects the sliding block via the deflection pulley with the tensile test machine.

7 Test specimen

7.1 Manufacture of test panels

Aluminium alloy according to EN 2090 with the dimension 500 mm × 150 mm × 1,5 mm.

7.2 Preparation of test specimens

7.2.1 Pre-treatment and coating of the panel i.a.w. the relevant material specification.

7.2.2 Apply a sufficient quantity of the well stirred coating material i.a.w. the relevant material specification, so that a dry film thickness of maximum 125 µm is achieved.

7.2.3 Cure the coating i.a.w. the relevant material specification.

7.3 Number of specimens

Three specimens shall be tested with three tests on each test specimen.

8 Procedure

8.1 Clamp each test specimen to the plane support plate. Apply (IRM-oil No. 903) ASTM-D 471 by brush on the coated surface.

8.2 Place the sliding block on the test specimen end opposing the deflection pulley.

8.3 Pull the sliding block over the total length of the test specimen at a speed of 500 mm/min using the tensile machine.

8.4 Perform this test three times for each test specimen without removing the test specimen from the plane support plate.

8.5 Record the frictional load as a function of the path.

9 Presentation of the results

9.1 Friction coefficient

Divide the path axis of the load -path diagram into 15 sections and read the frictional load values related to the respective sections. The mean value calculated from these values, excluding the initial and the final value of the diagram, is the sliding friction load based on the specific test. Calculate the corresponding sliding friction coefficient as follows:

$$\mu = \frac{F}{m g}$$

where:

- F sliding friction load based on the specific test (N);
- m mass of the sliding block (kg);
- g gravity (9,81 m/s²).

EN 4508:2006 (E)

9.2 Requirement

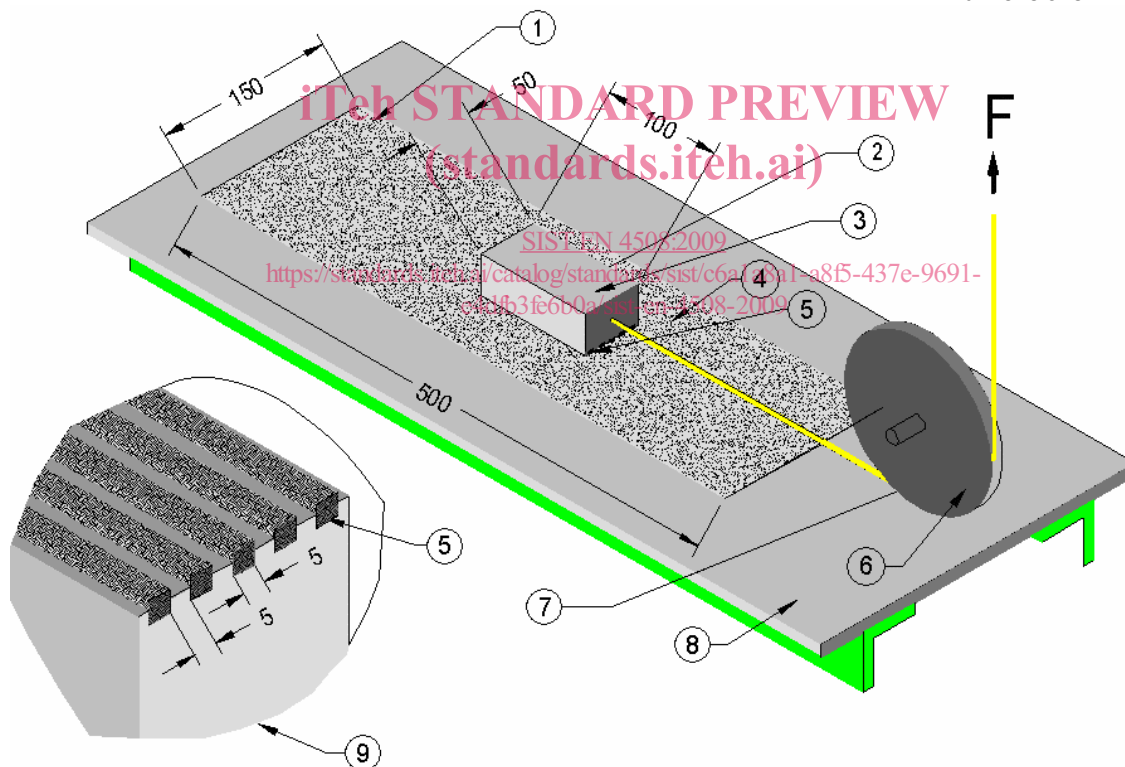
The minimum mean value of the sliding friction coefficient shall be as specified in the relevant material specification.

10 Test report

The test report shall refer to this standard and include the following:

- a) Complete identification of the tested material;
- b) All details about the preparation of specimens;
- c) Date of test, facility and identification of individuals performing the test;
- d) Equipment, method and test parameters used;
- e) Individual test results and calculations;
- f) Any incident which may have affected the results.

All dimensions in millimetres



Key

- | | |
|--------------------|--|
| 1 Thickness = 1,5 | 6 Deflection pulley |
| 2 Mass = 5 kg | 7 Diameter = 130 |
| 3 Sliding block | 8 Support plate |
| 4 Coated specimen | 9 Details of sliding block lower surface |
| 5 Elastomer strips | |

Figure 1 — Test arrangement