

Aerospace series - Paints and varnishes - Two components cold curing polyurethane finish - High flexibility and chemical agent resistance for military application

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 4689:2012 sisaldab Euroopa standardi EN 4689:2012 ingliskeelset teksti.	This Estonian standard EVS-EN 4689:2012 consists of the English text of the European standard EN 4689:2012.
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English Version

Aerospace series - Paints and varnishes - Two components cold curing polyurethane finish - High flexibility and chemical agent resistance for military application

Série aérospatiale - Peinture et vernis - Peinture de finition polyuréthane à deux composants polymérisant à température ambiante - Haute flexibilité et résistance aux substances chimiques pour applications militaires

Luft- und Raumfahrt - Anstrichstoffe - Zweikomponenten Polyurethan-Decklack, raumtemperaturhärtend - Hohe Elastizität und Beständigkeit gegen Chemikalien für militärische Anwendung

This European Standard was approved by CEN on 21 January 2012.

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Foreword

This document (EN 4689:2012) 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of an identical text or by endorsement, at the latest by September 2012, and conflicting national standards shall be withdrawn at the latest by September 2012.

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Introduction

The requirements concerning fibre reinforced composite substrates are established in Clause 7.

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1 Scope

This European Standard specifies the requirements for a two components flexible polyurethane top coat to be applied over EN 4687 and/or EN 4688 primers mainly for exterior aerospace applications.

The primer and the finish tested to this specification will be from the same manufacturer applied in accordance with (i.a.w.) their instruction / Table 1.

2 Normative references

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

EN 2101, *Aerospace series — Chromic acid anodizing of aluminium and wrought aluminium alloys*

EN 2334, *Aerospace series — Chromic-sulphuric acid pickle of aluminium and aluminium alloys*

EN 2437, *Aerospace series — Chromate conversion coatings (yellow) for aluminium and aluminium alloys*

EN 2436-006, *Aerospace series — Paints and varnishes — Corrosion resistant chromate-free two component cold curing epoxy primer — Part 006: High corrosion resistance for military application*

EN 3212, *Aerospace series — Paints and varnishes — Corrosion test by alternate immersion in a buffered sodium chloride solution*

EN 3837, *Aerospace series — Paints and varnishes — Nature and method for surface preparation of test pieces in aluminium alloys*¹⁾

EN 3840, *Aerospace series — Paints and varnishes — Technical specification*

EN 3847, *Aerospace series — Paints and varnishes — Determination of sedimentation rating*¹⁾

EN 4160, *Aerospace series — Non-metallic materials — Paints and varnishes — Test methods — Determination of the effect of thermal exposure*¹⁾

EN 4687, *Aerospace series — Paints and varnishes — Chromate free non corrosion inhibiting two components cold curing primer for military application*

EN 4688, *Aerospace series — Paints and varnishes — Corrosion inhibiting two components cold curing primer for military application*

EN 6042, *Aerospace series — Organic compounds — Test method — Analysis by infrared spectroscopy*¹⁾

EN ISO 1513, *Paints and varnishes — Examination and preparation of test samples*

1) Published as ASD-STAN Prestandard at the date of publication of this standard (www.asd-stan.org).

- EN ISO 1518, *Paints and varnishes — Scratch test*
- EN ISO 1519, *Paints and varnishes — Bend test (cylindrical mandrel)*
- EN ISO 1520, *Paints and varnishes — Cupping test*
- EN ISO 1524, *Paints, varnishes and printing inks — Determination of fineness of grind*
- EN ISO 2409, *Paints and varnishes — Cross-cut test*
- EN ISO 2431, *Paints and varnishes — Determination of flow time by use of flow cups*
- EN ISO 2811-1, *Paints and varnishes — Determination of density — Part 1: Pyknometer method*
- EN ISO 2811-2, *Paints and varnishes — Determination of density — Part 2: Immersed body (plummet) method*
- EN ISO 2811-3, *Paints and varnishes — Determination of density — Part 3: Oscillation method*
- EN ISO 2811-4, *Paints and varnishes — Determination of density — Part 4: Pressure cup method*
- EN ISO 2812-1, *Paints and varnishes — Determination of resistance to liquids — Part 1: Immersion in liquids other than water*
- EN ISO 2812-2, *Paints and varnishes — Determination of resistance to liquids — Part 2: Water immersion method*
- EN ISO 2813, *Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85°*
- EN ISO 3251, *Paints, varnishes and plastics — Determination of non-volatile-matter content*
- EN ISO 3675, *Crude petroleum and liquid petroleum products — Laboratory determination of density — Hydrometer method*
- EN ISO 3678, *Paints and varnishes — Print-free test*
- EN ISO 3679, *Determination of flash point — Rapid equilibrium closed cup method*
- EN ISO 3680, *Determination of flash/no flash — Rapid equilibrium closed cup method*
- EN ISO 4628-2, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 2: Assessment of degree of blistering*
- EN ISO 4628-8, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 8: Assessment of degree of delamination and corrosion around a scribe*
- EN ISO 6270-1, *Paints and varnishes — Determination of resistance to humidity — Part 1: Continuous condensation*
- EN ISO 9117-1, *Paints and varnishes — Drying tests — Part 1: Determination of through-dry state and through-dry time*
- EN ISO 9117-3, *Paints and varnishes — Drying tests — Part 3: Surface-drying test using ballotini*
- EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests*

EN ISO 9514, *Paints and varnishes — Determination of the pot life of multicomponent coating systems — Preparation and conditioning of samples and guidelines for testing*

EN ISO 11507, *Paints and varnishes — Exposure of coatings to artificial weathering — Exposure to fluorescent UV lamps and water*

EN ISO 11890-1, *Paints and varnishes — Determination of volatile organic compound (VOC) content — Part 1: Difference method*

EN ISO 11909, *Binders for paints and varnishes — Polyisocyanate resins — General methods of test*

ISO 7724-1, *Paints and varnishes — Colorimetry — Part 1: Principles*

ISO 7724-2, *Paints and varnishes — Colorimetry — Part 2: Colour measurement*

ISO 7724-3, *Paints and varnishes — Colorimetry — Part 3: Calculation of colour differences*

MIL-PRF-5606H, *Performance specification: Hydraulic fluid, petroleum base; aircraft, missile, and ordnance. (NATO H-515)* ²⁾

MIL-PRF-6081D, *Performance specification: Lubricating oil, jet engine. (NATO O-133)* ²⁾

MIL-PRF-23699F, *Performance specification: Lubricating oil, aircraft turbine engine, synthetic base, NATO code number O-156* ²⁾

MIL-DTL-83133G, *Detail specification: Turbine fuel, aviation, kerosene type, JP-8 (NATO F-34), NATO F-35, and JP-8+100 (NATO F-37)* ²⁾

AMS 1526B, *Cleaner for aircraft exterior surfaces water-miscible, pressure-spraying type* ³⁾

AMS 1527B, *Cleaner for aircraft exterior surfaces water-miscible, foam-on, pressure-spraying* ³⁾

AMS 1533A, *Cleaner for exterior aircraft surfaces gel-type, solvent-base* ³⁾

DEF STAN 68-10, *Corrosion Preventive, Water Displacing NATO Code: C-634 Joint Service Designation: PX-24*

STANAG 4477, *Specification for Paints and Paint Systems, Resistant to Chemical Agents and Decontaminants, for the Protection of Aerospace Military Equipment* ⁴⁾

BS 1595-1:1986, *Propan-2-ol (isopropyl alcohol) for industrial use — Part 1: Specification for propan-2-ol (isopropyl alcohol).*

2) Published by: DoD National (US) MIL. Department of Defense <http://www.defenselink.mil/>

3) Published by: SAE National (US) Society of Automotive Engineers <http://www.sae.org/>.

4) Published by: NATO EU MIL. - National (US) Mil. North Atlantic Treaty Organization <http://www.nato.int/docu/standard.htm>.