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**Aeronavtika - Barve in laki - Dvokomponentni temeljni premaz, korozijsko obstojen, brez kroma, ki se suši pri sobni temperaturi - 005. del: Za zunanjo uporabo, s toleranco pri pripravi površine**

Aerospace series - Paints and varnishes - Corrosion resistant chromate-free two component cold curing primer - Part 005: For exterior use with surface preparation tolerance

Luft- und Raumfahrt - Beschichtungsstoffe - Korrosionsbeständiger Zweikomponenten-Primer, kalthärtend, chromatfrei - Teil 005: Außenanwendung mit Oberflächentoleranzen

Série aérospatiale - Peintures et vernis - Peintures primaire anti-corrosion sans chromate à deux composants polymérisant à température ambiante - Partie 005 : Pour extérieur avec tolérance à la préparation de surface

**Ta slovenski standard je istoveten z: EN 2436-005:2006**

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**ICS:**

49.040	Prevleke in z njimi povezani postopki, ki se uporabljajo v letalski in vesoljski industriji	Coatings and related processes used in aerospace industry
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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 2436-005**

July 2006

ICS 49.040

English Version

**Aerospace series - Paints and varnishes - Corrosion resistant  
chromate-free two component cold curing primer - Part 005: For  
exterior use with surface preparation tolerance**

Série aérospatiale - Peintures et vernis - Peintures  
primaires anti-corrosion sans chromate à deux composants  
polymérisant à température ambiante - Partie 005 : Pour  
extérieur avec tolérance à la préparation de surface

Luft- und Raumfahrt - Anstrichstoffe -  
Korrosionsbeständiger Zweikomponenten-Grundanstrich,  
kalthärtend chromatfrei - Teil 005: Außenanwendung mit  
Oberflächentoleranzen

This European Standard was approved by CEN on 9 March 2006.

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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.



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## Foreword

This European Standard (EN 2436-005:2006) has been prepared by the AeroSpace and Defense 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 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.

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**EN 2436-005:2006 (E)****0 Introduction**

This standard is part of a series of EN non-metallic materials standards for aerospace applications. The general organisation of this series is described in EN 4385.

This standard is a level 3 document as defined in EN 4385.

Definition of subcase numbering in Tables 2 to 5 is given in TR 7000-9.

**1 Scope**

This standard specifies the basic requirements for a two component, cold curing, chromate-free epoxy or polyurethane, corrosion resistant primer which can be used with or without a finish for aerospace applications.

The properties specified in this standard are obtained on defined aluminium alloy test pieces prepared in accordance with EN 3837, process D and ISO 3270. The ability of the material to be used for a specific application (e.g. alternative substrate, alternative primer, specific drying conditions etc.) shall be determined by supplementary tests to confirm that the requirements of this standard are met.

**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 2379, *Aerospace series — Fluids for assessment of non-metallic materials*<sup>1)</sup>

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

EN 2434-004, *Aerospace series — Paints and varnishes — Two component cold curing polyurethane finish — Part 004: High flexibility*<sup>2)</sup>

EN 3840, *Aerospace series — Paints and varnishes — Technical specification*<sup>1)</sup>

EN 4385, *Aerospace series — Non-metallic materials — General organisation of standardisation — Links between types of standards*<sup>1)</sup>

ISO 1513, *Paints and varnishes — Examination and preparation of samples for testing*

ISO 3270, *Paints and varnishes and their raw materials — Temperature and humidities for conditioning and testing*

ISO 3696, *Water for analytical laboratory use — Specification and test methods*

TR 7000-9, *Aerospace series — Non-metallic materials — Rules for the drafting and presentation of material standards — Part 9: Paints and varnishes*<sup>3)</sup>

1) In preparation at the date of publication of this standard.

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 the standard.

### 3 Definitions

Not applicable.

### 4 Classification

The primer is classified according to the nature of the most typical chemical reaction that occurs between the two components:

Type A: epoxy — (reaction between an epoxy resin and an activator with amino functional groups).

Type B: polyurethane — (reaction between an hydroxyl functional resin and a polyisocyanate activator).

### 5 Batch release and qualification testing

#### 5.1 Batch release testing

For batch acceptance the tests marked with an \* in Tables 2 to 5 shall be performed.

#### 5.2 Qualification tests

For product qualification, all tests mentioned in this standard, in Tables 1 to 5, shall be performed.

Table 1 — General requirements

1.001	Material description	Two component cold curing chromate-free primer with surface tolerance.
1.002	Formulation	Base — a base containing essentially chromate corrosion inhibitor associated, or not, with pigments and fillers dispersed in a mixture of resins and solvents. Activator — an activator solution Thinner — if required
1.003	Form and method of production	These components shall be mixed in simple whole number proportions, by volume or by weight, in accordance with the manufacturer's instructions.
1.004	Technical specification	EN 3840
1.009	Application and use	Dry film thickness of $(20 \pm 5) \mu\text{m}$ .
1.010	Storage	See EN 3840
1.011	Shelf life	See EN 3840
1.013	Processing conditions	ISO 3270 for 7 days before testing unless otherwise specified.
1.093	Quality assurance	See EN 3840
1.094	Designation	Chromate-free primer. EN 2436-005 Type A or Type B
1.095	Packaging	See EN 3840
1.096	Identification marking	See EN 3840
1.097	Flash point	See EN 3840
1.098	Health and safety	See EN 3840

Table 2 — Physical and chemical characteristics

2.014	Condition *	1	ISO 1513	
		6	As received in original container.	
		7	Shall be free from extraneous matter and show no skinning, gelling, hard settlement or other defect which will prevent satisfactory application to produce a defect free film.	
2.011	Application properties and finish *	1	None	
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad
		4	EN 3837 Process D	Degreased
		5	Primer to this standard.	
		7	Paint film shall show an opaque even finish, free from runs, sags, wrinkling, pinholing or other defect.	
2.034	Sedimentation rating	1	EN 3840 Test 5	
		6	Base + activator + thinner	
		7	mL	V ≤ 30 after 4 h
2.012	Pot life *	1	EN 3840 Test 20 followed by Test 8 <sup>a</sup> or Test 9 <sup>a</sup>	
		6	Base + activator + thinner	
		7	s or Pa s	≤ 2 × initial value after 4 h
2.029	Viscosity *	1	EN 3840 Test 8 <sup>a</sup> or Test 9 <sup>a</sup>	
		6	Base + activator + thinner	
		7	s or Pa s	± 10 % <sup>b c</sup>
2.035	Fineness of grind *	1	EN 3840 Test 10	
		6	Base + activator	
		7	µm	≤ 30
2.027	Non volatile matter	1	EN 3840 Test 1	
		7	%	Base ± 2 <sup>b c</sup> Activator ± 2 <sup>b c</sup>
2.027	Volatile organic compound (VOC) content	1	EN 3840 Test 49	
		6	Base + activator + thinner	
		7	g/l	≤ reference value <sup>b c</sup>
2.057	Density *	1	EN 3840 Test 3	
		6	Base	
		7	g/cm <sup>3</sup>	± 2 <sup>b c e</sup>
2.057	Density hydrometer *	1	EN 3840 Test 4	
		6	Activator + thinner	
		7	g/cm <sup>3</sup>	Activator ± 1 <sup>b c</sup> Thinner ± 1 <sup>b c</sup>



Table 2 — Physical and chemical characteristics (concluded)

2.036	Flash point	1	EN 3840		
			Test 7		
		7	°C	Base ≥ reference value <sup>c</sup>	Activator ≥ reference value <sup>c</sup>
2.041	Surface dry time	1	EN 3840		
			Test 21		
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad	
		4	EN 3837 Process A	Degreased	
		5	Primer to this standard.		
		6	ISO 3270		
		7	h	≤ 1 <sup>d</sup>	
2.041	Drying time — Print free	1	EN 3840		
			Test 22		
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad	
		4	EN 3837 Process D	Degreased	
		5	Primer to this standard.		
		6	ISO 3270		
		7	h	≤ 4 using a load of 1 000 g <sup>d</sup>	
2.041	Through dry time	1	EN 3840		
			Test 23		
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad	
		4	EN 3837 Process D	Degreased	
		5	Primer to this standard.		
		6	ISO 3270		
		7	h	≤ 16	
2.999	Notes	<p>* See 5.1</p> <p>a Test 8 shall be used for non-thixotropic paints and test 9 for thixotropic paints.</p> <p>b The deviation is that compared to the reference value.</p> <p>c The reference value is that established during qualification.</p> <p>d Unless otherwise specified.</p> <p>e Test could also be used for activator and thinner if required.</p>			

Table 3 — Physico — Chemical characteristics

3.084 or 3.053	Colour	1	EN 3840		
			Test 30		
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad	
		4	EN 3837 Process A	Degreased	
		5	Primer to this standard		
		6	ISO 3270		
		7	ΔE	If specified shall match the colour specified by the user.	
3.088 or 3.083	Gloss 60°	1	EN 3840		
			Test 27		
		3	EN 3837 — A <sub>2</sub>	2024-T3 Clad	
		4	EN 3837 Process A	Degreased	
		5	Primer to this standard.		
		6	ISO 3270		
		7	Gloss units	≤ 20	
* See 5.1					