

STN	Letectvo a kozmonautika Anodické elektrolytické nanášanie základnej vrstvy bez obsahu šestmocného chrómu	STN EN 4868
		31 7929

Aerospace series - Anodic electrodeposition of hexavalent chromium free primer

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 02/24

Obsahuje: EN 4868:2023

Oznámením tejto normy sa ruší
STN EN 4868 (31 7929) z apríla 2020

138272

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4868

October 2023

ICS 49.040

Supersedes EN 4868:2019

English Version

Aerospace series - Anodic electrodeposition of hexavalent chromium free primer

Série aérospatiale - Électrodéposition anodique d'un primaire sans chrome hexavalent

Luft- und Raumfahrt - Anodische Elektrotauchlackierung von chrom(VI)-freier Grundierung

This European Standard was approved by CEN on 12 June 2023.

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-CENELEC 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-CENELEC 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 4868:2023 (E)

Contents

	Page
European foreword	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions.....	6
3.1 General terms.....	6
3.2 Technical terms.....	7
4 Purpose of process	7
4.1 General.....	7
4.2 Applicability.....	7
4.3 Limitations	8
5 Protection system classification.....	8
6 Process requirements	8
6.1 Information for the processor.....	8
6.2 Condition of parts prior to the treatment.....	8
6.3 Process conditions.....	9
6.3.1 Tooling.....	9
6.3.2 Masking	9
6.3.3 Surface pre-treatment.....	9
6.3.4 Anodic electrodeposition.....	9
6.3.5 Anodic electrodeposition post-treatments	10
6.4 Water quality.....	10
6.5 Rework.....	10
7 Required characteristics	10
7.1 General.....	10
7.2 Visual appearance	10
7.3 Film thickness	10
7.4 Physical properties of the film	10
7.5 Corrosion performance of coated parts.....	10
7.5.1 Filiform corrosion.....	10
7.5.2 Corrosion resistance.....	11
7.6 Fatigue requirements and test methods	11
7.7 Fluid resistance	11
8 Quality requirements	11
8.1 Process approval.....	11
8.2 General points.....	11
8.3 Periodic tests	11
8.4 Periodic chemical analysis	12
8.5 Parts acceptance inspections	12
8.5.1 Inspections before treatment.....	12
8.5.2 Inspections during treatment	12
8.5.3 Inspections after anodic electrodeposition	12
Annex A (normative) Engineering requirements.....	13
Annex B (normative) Test methods	16

Annex C (normative) Parts acceptance inspections.....	17
Annex D (normative) Periodic tests requirements	18
Annex E (informative) Standard evolution form.....	19
Bibliography	20

EN 4868:2023 (E)**European foreword**

This document (EN 4868:2023) 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 document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by April 2024, and conflicting national standards shall be withdrawn at the latest by April 2024.

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

This document supersedes EN 4868:2019.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

1 Scope

This document specifies the requirements for hexavalent chromium free anodic electrodeposition of organic coatings on aluminium and aluminium alloys for corrosion protection of parts.

This document specifies design, quality and manufacturing requirements. It does not specify complete in-house process instructions; these are specified in the processors detailed process instructions.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 3840, *Aerospace series — Paints and varnishes — Technical specification*

EN ISO 1518-1, *Paints and varnishes — Determination of scratch resistance — Part 1: Constant-loading method* (ISO 1518-1)

EN ISO 1519, *Paints and varnishes — Bend test (cylindrical mandrel)* (ISO 1519)

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

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

EN ISO 2812-2, *Paints and varnishes — Determination of resistance to liquids — Part 2: Water immersion method* (ISO 2812-2)

EN ISO 4623-2, *Paints and varnishes — Determination of resistance to filiform corrosion — Part 2: Aluminium substrates* (ISO 4623-2)

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 or other artificial defect* (ISO 4628-8)

EN ISO 4628-10, *Paints and varnishes — Evaluation of degradation of coatings — Designation of quantity and size of defects, and of intensity of uniform changes in appearance — Part 10: Assessment of degree of filiform corrosion* (ISO 4628-10)

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

EN ISO 17872, *Paints and varnishes — Guidelines for the introduction of scribe marks through coatings on metallic panels for corrosion testing* (ISO 17872)

koniec náhľadu – text d'alej pokračuje v platenej verzii STN