



**NSAI**  
Standards

Irish Standard  
I.S. EN 4827:2019

# Aerospace series - Hexavalent chromium free anodizing of aluminium and aluminium alloys

**I.S. EN 4827:2019**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 4827:2019 is the adopted Irish version of the European Document EN 4827:2019, Aerospace series - Hexavalent chromium free anodizing of aluminium and aluminium alloys

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**EUROPEAN STANDARD**

**EN 4827**

**NORME EUROPÉENNE**

**EUROPÄISCHE NORM**

September 2019

ICS 49.025.20; 49.040

Supersedes EN 4827:2017

English Version

## **Aerospace series - Hexavalent chromium free anodizing of aluminium and aluminium alloys**

Série aérospatiale - Anodisation sans chrome  
hexavalent de l'aluminium et des alliages d'aluminium

Luft- und Raumfahrt - Anodisieren von Aluminium und  
Aluminiumlegierungen ohne hexavalentem Chrom

This European Standard was approved by CEN on 14 July 2019.

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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 CEN-CENELEC Management Centre has the same status as the official versions.

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## **European foreword**

This document (EN 4827:2019) 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, 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of an identical text or by endorsement, at the latest by March 2020, and conflicting national standards shall be withdrawn at the latest by March 2020.

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 4827:2017.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

**EN 4827:2019 (E)****1 Scope**

This document defines the requirements for hexavalent chromium free anodizing of aluminium and aluminium alloys for corrosion protection, bonding and painting.

Hard anodizing and plasma electrolytic anodizing (micro-arc oxidation) are not covered by this document.

The purpose of this document is to give design, quality and manufacturing requirements. It does not give complete in-house process instructions; these are given 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 2284, *Aerospace series — Sulphuric acid anodizing of aluminium and wrought aluminium alloys*

EN 3665, *Aerospace series — Test methods for paints and varnishes — Filiform corrosion resistance test on aluminium alloys*

EN 4704, *Aerospace series — Tartaric-Sulphuric-Acid anodizing of aluminium and aluminium wrought alloys for corrosion protection and paint pre-treatment (TSA)*

EN 4707, *Aerospace series — Acid pickling of aluminium and aluminium alloy without hexavalent chromium<sup>1)</sup>*

EN 6072, *Aerospace series — Metallic materials — Test methods — Constant amplitude fatigue testing*

EN ISO 1463, *Metallic and oxide coatings — Measurement of coating thickness — Microscopical method*

EN ISO 2085, *Anodizing of aluminium and its alloys — Check for continuity of thin anodic oxidation coatings — Copper sulfate test*

EN ISO 2360, *Non-conductive coatings on non-magnetic electrically conductive base metals — Measurement of coating thickness — Amplitude-sensitive eddy-current method*

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

EN ISO 9220, *Metallic coatings — Measurement of coating thickness — Scanning electron microscope method*

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

EN ISO 10289, *Methods for corrosion testing of metallic and other inorganic coatings on metallic substrates — Rating of test specimens and manufactured articles subjected to corrosion tests*

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