
Aeronavtika - Kadmiranje jekla z določeno natezno trdnostjo ≤ 1450 MPa z bakrom, bakrovimi in nikljevimi zlitinami

Aerospace series - Cadmium plating of steels with specified tensile strength ≤ 1450 MPa, copper, copper alloys and nickel alloys

Luft- und Raumfahrt - Cadmieren von Stählen mit einer Zugfestigkeit ≤ 1450 MPa, Kupfer, Kupferlegierungen und Nickellegierungen

Série aérospatiale - Cadmiage électrolytique des aciers de résistance ≤ 1450 MPa, du cuivre, des alliages de cuivre et des alliages de nickel

Ta slovenski standard je istoveten z: EN 2133:2026

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 2133

October 2026

ICS 49.040

Supersedes EN 2133:2020

English Version

**Aerospace series - Cadmium plating of steels with
specified tensile strength $\leq 1\,450$ MPa, copper, copper
alloys and nickel alloys**

Série aérospatiale - Cadmiage électrolytique des aciers
de résistance $\leq 1\,450$ MPa, du cuivre, des alliages de
cuivre et des alliages de nickel

Luft- und Raumfahrt - Cadmieren von Stählen mit einer
Zugfestigkeit $\leq 1\,450$ MPa, Kupfer, Kupferlegierungen
und Nickellegierungen

This European Standard was approved by CEN on 17 August 2026.

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

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EN 2133:2026 (E)**European foreword**

This document (EN 2133:2026) has been prepared by 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of an identical text or by endorsement, at the latest by April 2027, and conflicting national standards shall be withdrawn at the latest by April 2027.

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 2133:2020.

EN 2133:2026 includes the following significant technical changes with respect to EN 2133:2020:

- making the nickel strike optional instead of mandatory;
- clarifying the definitions of brightener and wetting agent;
- providing clarification on the heat treatment;
- adding the option to perform de-embrittlement heat treatment after removal and re-plating if both processes take less than 4 h;
- including information on post-treatment in type 3;
- adding an introductory sentence before the different types of cadmium plating;
- modifying Annex A.

See also Annex B for a list of technical changes.

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 electrolytic cadmium plating of parts and fasteners in steel of tensile strength $UTS \leq 1\,450$ MPa, copper, copper alloys and nickel alloys, whose temperature in service does not exceed 235 °C.

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 2828, *Aerospace series — Adhesion test for metallic coatings by burnishing*

EN 2831, *Aerospace series — Hydrogen embrittlement of steels — Test by slow bending*

EN 2832, *Aerospace series — Hydrogen embrittlement of steels — Notched specimen test*

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

EN ISO 2082, *Metallic and other inorganic coatings — Electroplated coatings of cadmium with supplementary treatments on iron or steel* (ISO 2082)

EN ISO 2177, *Metallic coatings — Measurement of coating thickness — Coulometric method by anodic dissolution* (ISO 2177)

EN ISO 2178, *Non-magnetic coatings on magnetic substrates — Measurement of coating thickness — Magnetic method* (ISO 2178)

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

EN ISO 2819, *Metallic coatings on metallic substrates — Electrodeposited and chemically deposited coatings — Review of methods available for testing adhesion* (ISO 2819)

EN ISO 3497, *Metallic coatings — Measurement of coating thickness — X-ray spectrometric methods* (ISO 3497)

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ASTM B117-19,¹ *Standard Practice for Operating Salt Spray (Fog) Apparatus*

ASTM F519-18,¹ *Standard Test Method for Mechanical Hydrogen Embrittlement — Evaluation of Plating/Coating Process and Service Environments*

NASM 1312-5,² *Fastener test methods — Method 5 — Stress durability*

NASM 1312-14,² *Fastener test methods — Method 14 — Stress durability, internally threaded fasteners*

¹ Published by: American Society for Testing and Materials (ASTM International), available at: <https://www.astm.org/>.

² Published by Aerospace Industries Association (AIA), available at: <https://www.aia-aerospace.org/>.