Irish Standard
I.S. EN 4826:2014

Aerospace series - Zinc-Nickel (12 %-16 % Ni) plating of steels with specified tensile strength ≤ 1 450 MPa, copper alloys, nickel alloys and aluminium alloys for parts and fasteners

I.S. EN 4826:2014

Incorporating amendments/corrigenda/National Annexes issued since publication:

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This document replaces/revises/consolidates the NSAI adoption of the document(s) indicated on the CEN/CENELEC cover/Foreword and the following National document(s):

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EUROPEAN STANDARD

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English Version

Aerospace series - Zinc-Nickel (12 %-16 % Ni) plating of steels with specified tensile strength ≤ 1 450 MPa, copper alloys, nickel alloys and aluminium alloys for parts and fasteners

Série aérospatiale - Dépôt électrolytique Zinc-Nickel (12 %-16 % Ni) sur aciers de résistance ≤ 1 450 MPa, sur alliages de cuivre, alliages de nickel et alliages d'aluminium pour pièces et éléments de fixation

Luft- und Raumfahrt - Zink-Nickel (12 % bis 16 % Ni) Stahlbeschichtung mit festgelegter Zugfestigkeit ≤ 1 450 MPa, Kupfer-, Nickel- und Aluminiumlegierungen für Verbindungsteile und Verschlüsse

This European Standard was approved by CEN on 28 June 2014.

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

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Contents

Foreword

This document (EN 4826:2014) 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of an identical text or by endorsement, at the latest by June 2015, and conflicting national standards shall be withdrawn at the latest by June 2015.

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.

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1 Scope

This European Standard specifies the plating of a Zinc-Nickel (12 % to 16 %) alloy on mechanical parts and fasteners in steels (R_m ≤ 1 450 MPa), stainless steels (R_m ≤ 1 450 MPa), copper alloys, nickel alloys and aluminium alloys (not applicable for electrical components), as well as the passivation and lubricant finishing that can be associated to them. The Zinc-Nickel process is an electrolytic plating process under controlled current allowing to deposit a Zinc-Nickel layer from, most often, an alkaline electrolyte. Alkaline Zinc-Nickel is only considered in this standard.

The purpose of this standard is to give technical and quality requirements of Zinc-Nickel plating. It doesn't give complete in-house process instructions, these shall be given in the manufacturers detailed process instructions.

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

EN 4473, *Aerospace series — Aluminium pigmented coatings for fasteners — Technical specification*

EN 9100, *Quality Management Systems — Requirements for Aviation, Space and Defence Organizations*

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

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 2812 (all parts), *Paints and varnishes — Determination of resistance to liquids*

NASM 1312-5, *Fastener test methods — Method 5: Stress durability* [1)]

NASM 1312-14, *Fastener test methods — Method 14: Stress durability internally threaded fasteners* [1)]

ASTM F 519, *Standard test method for mechanical hydrogen embrittlement evaluation of plating/coating processes and service environments* [2)]

1) Published by: AIA National (US) Aerospace Industries Association of America http://www.aia-aerospace.org/

2) Published by: ASTM National (US) American Society for Testing and Materials http://www.astm.org/