

STN	Letectvo a kozmonautika. Zinkovo-niklové (12 % - 16 % Ni) pokovovanie ocelí s pevnosťou v ťahu $\leq 1\,450$ MPa, zliatin medi, zliatin niklu, zliatin hliníka pre zostavy a spojovacie prvky.	STN EN 4826 31 8236
------------	--	---------------------------------------

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

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. 05/15

Obsahuje: EN 4826:2014

120725

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, odbor SÚTN, 2015
Podľa zákona č. 264/1999 Z. z. v znení neskorších predpisov sa môžu slovenské technické normy rozmnožovať a rozširovať iba so súhlasom Úradu pre normalizáciu, metrológiu a skúšobníctvo SR.

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 4826

December 2014

ICS 49.040

English Version

**Aerospace series - Zinc-Nickel (12 %-16 % Ni) plating of steels
with specified tensile strength $\leq 1\,450$ 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 $\leq 1\,450$ 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 $\leq 1\,450$ MPa, Kupfer-, Nickel- und Aluminiumlegierungen für Verbindungsteile und Verschlüsse

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

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, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and United Kingdom.



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

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Contents

	Page
Foreword.....	3
1 Scope	4
2 Normative references	4
3 Terms and definitions	5
4 Purpose of process	5
5 Applicability and limitations of the process	6
6 Coating system classification	6
6.1 System types	6
6.2 Coating thicknesses	7
7 Requirements	7
7.1 Process requirements	7
7.2 Main technical engineering requirements	9
8 Quality requirements	11
8.1 Approval of the processor	11
8.2 Process approval	11
8.3 General points	12
8.4 Periodic tests	13
8.5 Periodic chemical analysis	13
8.6 Parts acceptance controls	13
9 Designation	14

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.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the plating of a Zinc-Nickel (12 % to 16 %) alloy on mechanical parts and fasteners in steels ($R_m \leq 1\,450$ MPa), stainless steels ($R_m \leq 1\,450$ 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⁾

koniec náhľadu – text ďalej pokračuje v platenej verzii STN

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/>