

STN	Letectvo a kozmonautika. Akceptácia variácií estetického vzhľadu častí kabín lietadiel.	STN EN 4726
		31 0654

Aerospace series - Acceptance of the cosmetic variations in appearance of aircraft cabin parts

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. 01/16

Obsahuje: EN 4726:2015

122229

Úrad pre normalizáciu, metrológiu a skúšobníctvo SR, 2016
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 4726

September 2015

ICS 49.095

English Version

**Aerospace series - Acceptance of the cosmetic variations in
appearance of aircraft cabin parts**

Série aérospatiale - Acceptation des variations
esthétiques de l'aspect des éléments de cabine d'avion

Luft- und Raumfahrt - Akzeptanz von kosmetischen
Qualitätsabweichungen bei Flugzeug-Kabinenbauteilen

This European Standard was approved by CEN on 10 January 2015.

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
European foreword.....	5
1 Scope.....	6
2 Normative references.....	6
3 Abbreviations	6
4 Definitions of cosmetic defects, inspection zones and criteria	7
4.1 Simplified definition of a cosmetic defect	7
4.2 Zonal type definition for installed parts.....	7
4.2.1 Zone A.....	7
4.2.2 Zone B.....	8
4.2.3 Zone C	8
4.3 Classification of surfaces to be inspected.....	8
4.4 Split lines, definition, cutting and placement	13
4.5 Time limits and part appraisal.....	14
4.6 Distance from the test specimen	14
4.6.1 Distance at FAI-, source- and incoming – inspection (general ruling).....	14
4.6.2 Distance at FAL, final inspection and customer presentation	14
4.7 Illumination	14
4.7.1 Additional light sources.....	15
4.7.2 Surfaces.....	15
4.7.3 Production masters	18
5 Evaluation tables and defect size assessment	18
6 Inspection template to ascertain defect sizes.....	21
Annex A (normative) Unacceptable characteristics of findings	22
A.1 General.....	22
A.2 Perforation, puncture or penetration.....	22
A.3 Cuts, cracks, scratches, pits tears and rips (any medium)	22
A.4 Adherence, de-lamination, loose / flimsy items	24
A.5 Stains	25
A.6 Excess adhesive (glue) and sealant	25
A.7 Decor overlapping / joints.....	26
A.8 Differences in decor	27
A.9 Pattern distortion through application	27
A.10 Texture loss	27
A.11 Misalignment whether pattern, material, part or point	27
A.12 Dents and dings.....	30
A.13 Decor trimming (cut-outs).....	30
A.14 Telegraphing.....	31
A.15 Changes of colours / shades	31
A.16 Chafing marks.....	32
A.17 Brushing direction	34
A.18 Creases on bends, rippling.....	34
A.19 Sharp edges	34
A.20 Protrusions and sinking	34

A.21	Welds.....	34
A.22	Chrome and galvanization.....	34
A.23	Gaps	35
A.24	Manufacturing process tooling marks	35
A.25	Seams	35
A.26	Textiles and leather, colouring and surface texture.....	35
A.27	"Soft furnishing".....	36
A.28	Screws	36
A.29	Inserts	38
A.30	Foam seals and flexible seals.....	40
A.31	Varnish, clear lacquer finishes	40
A.32	Placards, signs, labels and engravings	40
A.33	Light leakage	40
A.34	Transparent sections of components.....	40
A.35	Retouching / reworks	41

Tables

Table 1 — Evaluation Table valid for parts up to: 0,25 m ²	18
Table 2 — Evaluation table valid for parts up to: 0,5 m ²	19
Table 3 — Evaluation table valid for parts larger than: 0,5 m ²	20
Table 4 — Evaluation table valid for broad but not long defects, e. g. scratches, low marks, over spraying, hairs etc.	20

Figures

Figure 1 — Cabin lining.....	9
Figure 2 — Pax seat	10
Figure 3 — CAS seat.....	11
Figure 4 — Cabin monument	11
Figure 5 — Galley	12
Figure 6 — Example for other cabin parts.....	13
Figure 7— Example for inspection template to ascertain defect sizes.....	21
Figure A.1 — Example of a perforation finding.....	22
Figure A.2 — Example of a crack finding	23
Figure A.3 — Example of a cut finding.....	23
Figure A.4 — Example of a paint defect finding	23
Figure A.5 — Example of a scratch finding	24
Figure A.6 — Example of a scratch finding	24
Figure A.7 — Example of a poor adhesion finding	25
Figure A.8 — Example of a stain finding	25

Figure A.9 — Example of non-acceptable finding	26
Figure A.10 — Example of decor misalignment finding	26
Figure A.11 — Example of uneven split line finding	26
Figure A.12 — Example of poor fit split line finding	27
Figure A.13 — Example of an alignment finding	28
Figure A.14 — Example of a misalignment finding	28
Figure A.15 — Example of an alignment finding	29
Figure A.16 — Example of an alignment finding	29
Figure A.17 — Example of a dent finding	30
Figure A.18 — Example of an uneven edge finding	30
Figure A.19 — Example of a poor trimming finding	31
Figure A.20 — Example of a discolouration finding	31
Figure A.21 — Example of a chafing finding	32
Figure A.22 — Example of a chafing finding	32
Figure A.23 — Example of a chafing finding	32
Figure A.24 — Example of an indentation finding	33
Figure A.25 — Example of a cut finding	33
Figure A.26 — Example of a hole finding	33
Figure A.27 — Example of a protrusion finding	34
Figure A.28 — Example of a stain finding	36
Figure A.29 — Example of a disfigurement finding	36
Figure A.30 — Example of a ground screw finding	37
Figure A.31 — Example of a countersink finding	37
Figure A.32 — Example of a missing screw finding	38
Figure A.33 — Example of a bad hole finding	38
Figure A.34 — Example of a blocked insert finding	39
Figure A.35 — Example of an excessive glue finding	39
Figure A.36 — Example of a not de-burred insert finding	39
Figure A.37 — Example of a blistering finding	40
Figure A.38 — Example of a thin layer finding	41

European foreword

This document (EN 4726:2015) 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 March 2016, and conflicting national standards shall be withdrawn at the latest by March 2016.

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 standard defines surfaces on visible components in the aircraft cabin. Surfaces will be considered under the aspects of technical feasibility of the industrial design.

This standard is a guideline between airlines, supplier and OEMs with regard to cosmetic issues.

This document aims to:

- a) Provide the supplier with quality criteria, which need to be met during the production, testing- and quality-inspection-process;
- b) Guide airline-, OEM- and supplier-quality assurance with a description of cosmetic standards for following inspections:
 - Supplier internal QA inspection;
 - First article inspection;
 - Source inspection;
 - Incoming inspection;
 - Final assembly line cabin inspection.

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 12464-1, *Light and lighting — Lighting of work places — Part 1: Indoor work places*

EN ISO 2813, *Paints and varnishes — Determination of specular gloss of non-metallic paint films at 20°, 60° and 85°*

EN ISO 11664-1, *Colorimetry — Part 1: CIE standard colorimetric observers*

EN ISO 11664-2, *Colorimetry — Part 2: CIE standard observers*

EN ISO 11664-4, *Colorimetry — Part 4: CIE 1976 L*a*b* Colour space*

EN ISO 11664-5, *Colorimetry — Part 5: CIE 1976 L*u*v* Colour space and u', v' uniform chromaticity scale diagram*

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