



SLOVENSKI STANDARD
SIST EN 4697:2012
01-september-2012

Aeronavtika - Splošne zahteve in zahteve za namestitev pritrtilnih elementov potniških sedežev

Aerospace series - General and installation requirements for passenger seat fittings

Luft- und Raumfahrt - Allgemeine und Einbau Anforderungen an die Sitzanbindung von Passagiersitzen

Série aérospatiale - Exigences générales et d'installation pour siège passager

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Ta slovenski standard je istoveten z: **SIST EN 4697:2012** **EN 4697:2012**
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ICS:

49.095	Oprema za potnike in oprema kabin	Passenger and cabin equipment
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EUROPEAN STANDARD

EN 4697

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2012

ICS 49.095

English Version

**Aerospace series - General and installation requirements for
passenger seat fittings**Série aérospatiale - Exigences générales et d'installation
pour siège passagerLuft- und Raumfahrt - Allgemeine und Einbau
Anforderungen an Fittinge von Passagiersitzen

This European Standard was approved by CEN on 25 February 2012.

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, 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.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (EN 4697:2012) 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 November 2012, and conflicting national standards shall be withdrawn at the latest by November 2012.

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, 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.

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EN 4697:2012 (E)**1 Scope**

This European Standard specifies the installation and removal requirements and the space envelopes for passenger seat fittings on aircraft. The purpose is to reduce the installation time and the tooling required for seat installation by standardizing the seat attachment fasteners (fittings).

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

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard parts*

AMS 1424J, *Aircraft Deicing/Anti-icing Fluids* ¹⁾

AMS 1428F, *Fluid, Aircraft De-icing/Anti-Icing, Non-Newtonian, (Pseudoplastic)* ¹⁾

AMS 1550B, *Cleaner, Water Base, Aircraft Interior Hard Surface Materials* ¹⁾

AMS 1630C, *Cleaner, Carpet, Shampoo Type* ¹⁾

AMS 1631C, *Cleaner, Carpet Water Extraction Type* ¹⁾

AS8049B, *Performance Standard for Seats in Civil Rotorcraft, Transport Aircraft and General Aviation A/C* ¹⁾

CS-25 Amendment 5, 5 September 2008, *Certification Specification for Large Aeroplanes* ²⁾

FAR 25 Amendment 127, 28 October 2008, *Airworthiness Standards: Transportation Category Airplanes* ³⁾

RTCA DO-160F 6 December 2007, *Environmental Conditions and Test Procedures for Airborne Equipment* ⁴⁾

¹⁾ Published by: SAE National (US) Society of Automotive Engineers <http://www.sae.org/>

²⁾ Published by: European Aviation Safety Agency (EASA), Postfach 101253, D-50452 Koeln, Germany

³⁾ Published by: FAA National (US) Federal Aviation Administration <http://www.faa.gov/>

⁴⁾ Published by: Radio Technical Commission for Aeronautics (RTCA), 1828 L Street, NW, Suite 805 Washington, DC 20036, USA

3 Abbreviations

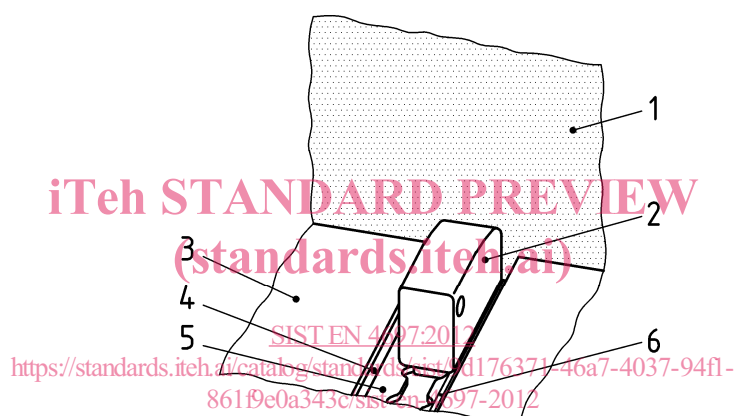
For the purposes of this standard, the following abbreviations apply.

A/C	Aircraft.
Acc.	According.
Fwd	Forward.
SLD	Shear Locking Device.

4 Requirements

4.1 General

The fitting design shall fit within the given space envelope, according to Figure 1 and Figure 6.



Key

- 1 Monument
- 2 Fitting body
- 3 Carpet
- 4 Floor panel
- 5 Seat rail
- 6 Raceway

Figure 1 — Fitting environment 1

All fittings attached to seat legs shall be pre-set to the correct seat track dimensions with fine adjustment of the fitting during installation not being necessary.

Minimum front to rear fitting distance shall be 482,6 mm (19") between the extreme studs of each fitting.

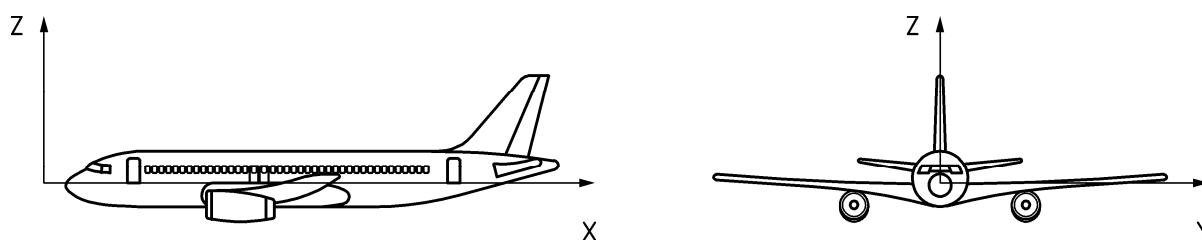


Figure 2 — Aircraft Coordinate System

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The front attachment fasteners shall cover the tolerances in X-direction (see Figure 2) that might occur due to installation tolerances (of the seat leg and of the A/C structure).

The fitting weight shall be according to Table 1.

Table 1 — Fitting classes

Fitting class	Fitting	Weight g
A	Rear triple stud fitting	≤ 150
B		≤ 250
C	Rear quadruple stud fitting	≤ 200
D		≤ 290
E	Forward single stud fitting	≤ 50
F		≤ 90

Maintenance or repair work on the seat track shall be taken into account during fitting design. Details see Figure 3.

iTeh STANDARD PREVIEW Dimensions in millimetres
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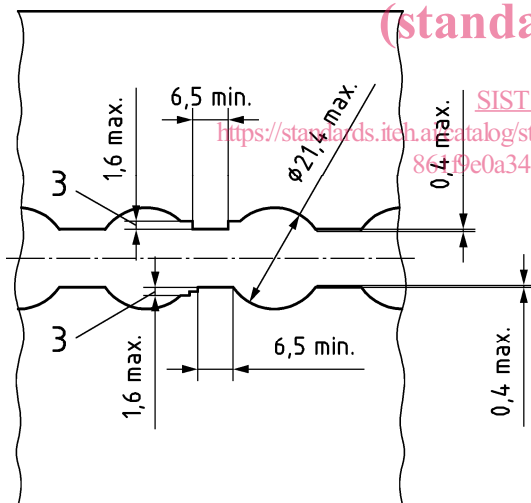


Figure 3a — Seat track top view

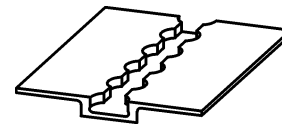


Figure 3b — Seat track 3 D view

continued

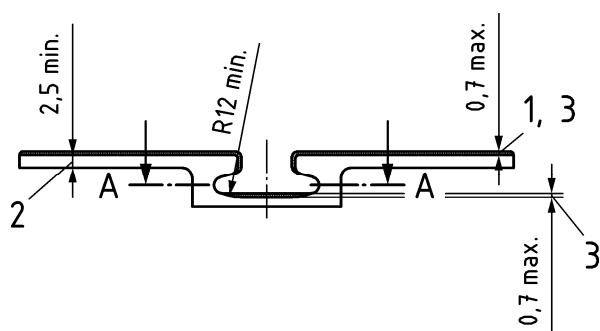


Figure 3c — Damage repair cross section 1

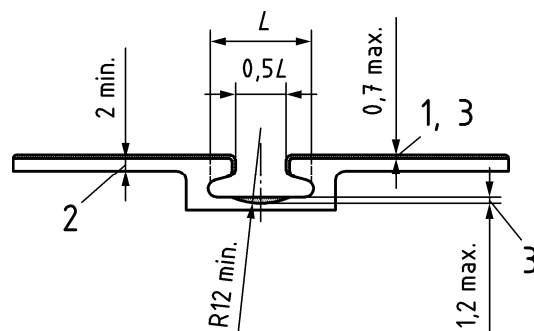
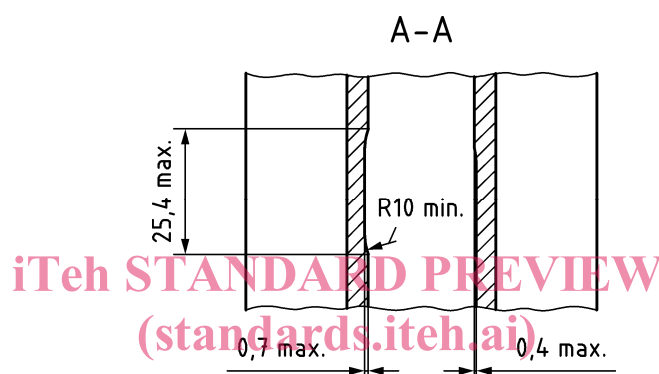


Figure 3d — Damage repair cross section 2



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 Figure 3e — Damage repair top view

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Key

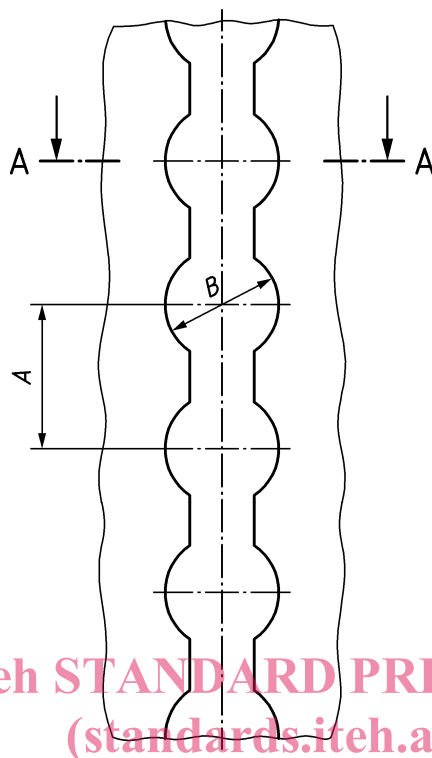
- 1 If the amount of material removed on one side of a seat track exceeds 0,3 mm (0.012 inch) maximum in depth, it is necessary to remove the same amount from the other side, so that a level surface is achieved
- 2 Minimum remaining thickness after rework
- 3 Maximum rework depth as reference to nominal thickness

Figure 3 — Seat track allowable damage limits and repair solutions

The fitting design shall show no evidence of any movement/rattling of the fitting-track combination. A continuous load path shall be ensured at all times. A shear-locking device should only be incorporated in the rear fitting. Fitting design and performance shall be validated incorporating the fitting-seat combination.

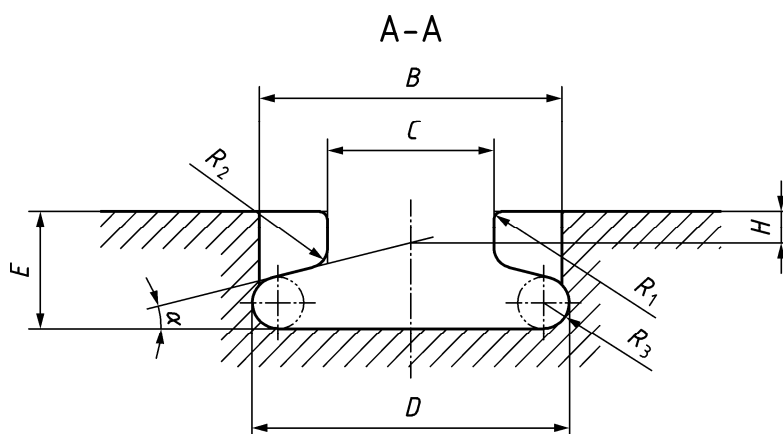
4.2 Interface

The fitting shall be compatible with the standard seat track concept, see Figure 4 and detail.



Dimension 1
 Tolerance of $\pm 0,1$ mm (0.004 inch) on 1 pitch
 Tolerance of $\pm 0,5$ mm (0.020 inch) on 100 pitches

Figure 4 — Seat rail top view



Detailed seat rail dimensions, see Table 2.

Figure 5 — Seat rail cross section

Table 2 — Seat rail dimensions

Dimensions in millimetres (in inches)

<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>H</i>	α°	<i>R</i> ₁	<i>R</i> ₂	<i>R</i> ₃
min. max.	min. max.	min. max.	min. max.	min. max.	min. max.	min. max.	min. max.	min. max.	
25,3 25,5	19,7 20,0	10,7 11,0	20,5 21,0	7,8 8,0	2,3 2,7		0 1,0	0,8 1,8	Full
$\left(\begin{array}{c} 0.996 \\ 1.004 \end{array} \right)$	$\left(\begin{array}{c} 0.776 \\ 0.787 \end{array} \right)$	$\left(\begin{array}{c} 0.421 \\ 0.433 \end{array} \right)$	$\left(\begin{array}{c} 0.807 \\ 0.827 \end{array} \right)$	$\left(\begin{array}{c} 0.307 \\ 0.315 \end{array} \right)$	$\left(\begin{array}{c} 0.091 \\ 0.106 \end{array} \right)$	13,75 14,25	$\left(\begin{array}{c} 0 \\ 0.039 \end{array} \right)$	$\left(\begin{array}{c} 0.031 \\ 0.071 \end{array} \right)$	Full

NOTE 1 Diameter *B* and slot centerline *D* shall be coincident with slot centerline *C* to within 0,13 mm (0.005 inch).

NOTE 2 All faces shall be within 0,5° of the specified position relative to the upper surface of the rail.

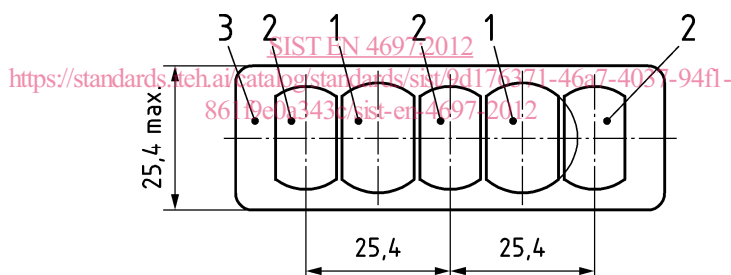
The fitting shall be compatible with the currently marketed seat concepts. Therefore several clevis positions of the fitting should be available.

The rear fitting shall have dimensions according to Figure 6 and Figure 7 and a compact design without any sharp edges or corners.

The front fitting shall have dimensions according to Figure 8 and a compact design without any sharp edges or corners.

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Dimensions in millimetres

**Key**

- 1 Shear pin
- 2 Stud
- 3 Fitting body

Figure 6 — Design example rear fitting bottom side