



# SLOVENSKI STANDARD

## oSIST prEN 4727:2024

01-oktober-2024

---

### Aeronavtika - Standardizirani podatki o teži potniških sedežev

Aerospace series - Standardized passenger seat weight information

Luft- und Raumfahrt - Standardisierte Sitzgewichtsangaben für Passagiersitze

Série aérospatiale - Définition normalisée du poids d'un siège passager

Ta slovenski standard je istoveten z: prEN 4727

---

#### **ICS:**

49.095

Oprema za potnike in  
oprema kabin

Passenger and cabin  
equipment

**oSIST prEN 4727:2024**

**en,fr,de**



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 4727**

July 2024

ICS 49.095

Will supersede EN 4727:2017

English Version

## Aerospace series - Standardized passenger seat weight information

Série aérospatiale - Définition normalisée du poids d'un siège passager

Luft- und Raumfahrt - Standardisierte Sitzgewichtsangaben für Passagiersitze

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee ASD-STAN.

If this draft becomes a European Standard, 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.

This draft European Standard was established by CEN 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Warning** : This document is not a European Standard. It is distributed for review and comments. It is subject to change without notice and shall not be referred to as a European Standard.



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

**CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels**

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>Introduction</b> .....	<b>4</b>
<b>1 Scope</b> .....	<b>5</b>
<b>2 Normative references</b> .....	<b>5</b>
<b>3 Terms and definitions</b> .....	<b>5</b>
<b>4 Abbreviations</b> .....	<b>5</b>
<b>5 Requirements</b> .....	<b>6</b>
<b>5.1 General</b> .....	<b>6</b>
<b>5.2 Catalogue seat weight</b> .....	<b>6</b>
<b>5.2.1 Seat categories I through IV</b> .....	<b>6</b>
<b>5.2.2 Seat categories V through VI</b> .....	<b>8</b>
<b>5.3 Estimated seat weight</b> .....	<b>9</b>
<b>5.4 Calculated seat weight</b> .....	<b>9</b>
<b>5.5 Actual seat weight empty</b> .....	<b>9</b>
<b>5.6 Maximum seat weight loaded</b> .....	<b>9</b>
<b>5.7 Certified seat weight</b> .....	<b>10</b>
<b>5.8 Seat weight for the eco efficiency index</b> .....	<b>10</b>
<b>5.8.1 General</b> .....	<b>10</b>
<b>5.8.2 Seat category I and II</b> .....	<b>10</b>
<b>5.8.3 Seat category III</b> .....	<b>11</b>
<b>5.8.4 Seat category IV</b> .....	<b>13</b>
<b>5.8.5 Seat category V and VI</b> .....	<b>14</b>
<b>5.9 Seat weight accuracy</b> .....	<b>18</b>
<b>6 Template of seat weight lists</b> .....	<b>18</b>

## European foreword

This document (prEN 4727:2024) has been prepared by ASD-STAN.

This document is currently submitted to the CEN Enquiry.

This document will supersede EN 4727:2017.

This document includes the following significant technical changes with respect to EN 4727:2017:

- new Clause 3 Terms and definitions added;
- description added how to estimate the seat weights in 5.3;
- description added how to calculate the seat weights and calculated seat weights to be shown on the supplier drawings and DDP instead of actual seat weight empty in 5.4;
- definition of actual seat weight empty refined in 5.5;
- seat weight for the eco efficiency index added in 5.8;
- defined seat weight changed into seat weight accuracy in 5.9.

Itih Standards  
(<https://standards.iteh.ai>)  
Document Preview

[oSIST prEN 4727:2024](https://standards.iteh.ai/catalog/standards/sist/bc0229bd-d2cb-4541-b9fe-aaa88837ef9a/osist-pren-4727-2024)

<https://standards.iteh.ai/catalog/standards/sist/bc0229bd-d2cb-4541-b9fe-aaa88837ef9a/osist-pren-4727-2024>

## **Introduction**

The weight for cabin equipment is an important topic in the aviation business. The cabin equipment weight has a direct impact on the payload of the aircraft, operation cost and revenue of the airlines. Due to the quantity of aircraft seats, seats are one of the major weight drivers in the cabin. At this time, a lot of seat weights are used without any clear definition, e.g. allowable max. weight, certified weight, defined weight. For the definition of each customer specific cabin, it is important to get comparable seat weights. Aircraft seats are very different with regard to seat envelope dimensions and integrated features and options. For a weight determination and product comparison, it is very helpful to get comparable weight information based on a standard weight.

In this document, the following verbal forms are used:

- “shall” indicates a requirement;
- “should” indicates a recommendation;
- “may” indicates a permission;
- “can” indicates a possibility or a capability.

# iTeh Standards (<https://standards.iteh.ai>) Document Preview

[oSIST prEN 4727:2024](https://standards.iteh.ai/catalog/standards/sist/bc0229bd-d2cb-4541-b9fe-eea88837ef9a/osist-pren-4727-2024)

<https://standards.iteh.ai/catalog/standards/sist/bc0229bd-d2cb-4541-b9fe-eea88837ef9a/osist-pren-4727-2024>

## 1 Scope

This document specifies a definition for the different weight information for the weight reporting during the development and the certification phase. Further it is a baseline for a seat weight determination to get comparable seat weights for seat brochures, marketing reasons and the eco efficiency index.

## 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.

prEN 4912,<sup>1</sup> *Aerospace series — ECO efficiency of seats*

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp/>
- IEC Electropedia: available at <https://www.electropedia.org/>

## 4 Abbreviations

CAD	computer aided design
CDR	critical design review
DDP	declaration of design and performance
DSM	decorative sheet material
EEI	eco efficiency index
FRM	front row monument
IFE	in-flight entertainment
IIL	installation instructions and limitations
OEM	original equipment manufacturer
pax	passenger
PCU	power control unit
PRM	people with reduced mobility
P/N	part number
PU	polyurethane
SEB	seat electronic box
std.	standard

---

<sup>1</sup> Under preparation in parallel.

## **5 Requirements**

### **5.1 General**

Aircraft seats are highly customized and the final seat weight always depends on the specific customer requests.

In order to get a weight definition and to cover all needs of the OEMs, airlines and seat suppliers, following seat weights are defined in this document:

- a) catalogue seat weight;
- b) estimated seat weight;
- c) calculated seat weight;
- d) actual seat weight empty;
- e) maximum seat weight loaded;
- f) maximum certified seat weight;
- g) seat weight accuracy.

### **5.2 Catalogue seat weight**

#### **5.2.1 Seat categories I through IV**

The catalogue seat weight is a theoretical seat weight, evaluated based on a pre-defined seat configuration. The catalogue seat weight shall be used for marketing reasons in seat catalogues and seat brochures. The catalogue weight according to this document ensures the availability of comparable weight information for the seat models offered on the market.

The catalogue seat weight shall be evaluated for a std. triple and front row triple seat with a seat width of 62 in (1 575 mm) measured from the most inboard to the most outboard point and installed on two straight seat legs.

Following parts shall be included:

- a) primary structure:
  - 1) two seat legs, including two front and two rear fittings;
  - 2) base members/seat track covers between front and rear fittings;
  - 3) baggage bar under all three seat places;
  - 4) beams (front and rear if two beams);
  - 5) seat spreaders;
  - 6) seat pans;
  - 7) seat belt attachments;
- b) secondary structure:



- 1) one fixed armrest structure outboard;
  - 2) two armrest structures for foldable centre armrest (for front row seats two fixed armrests with integrated in-armrest tables);
  - 3) one armrest structure for a foldable armrest aisle side for people with reduced mobility (PRM) (for front row seats one fixed armrest with integrated in-armrest table);
  - 4) three backrest structures;
  - 5) three recline mechanisms (if a seat is offered only with no recline it shall be indicated);
  - 6) one aisle side stewardess step;
  - 7) all smaller structure items needed, e.g. gap closures;
- c) seat cushion assemblies:
- 1) std. or if required including a fire blocking layer;
- d) backrest cushion assemblies:
- 1) std. or if required including a fire blocking layer;
- e) seat belts:
- 1) for calculation purposes three std. seat belts' weight shall be calculated at 0,315 kg/seat belt (e.g. three belts = 0,945 kg);
- f) backrest tables:
- 1) three standard backrest table kits including the table itself, table latch and any optional functions e.g. sliding mechanism and each related means of attachment to seat structure (if a seat table is offered only with no sliding mechanism it shall be indicated);
- g) literature pockets:
- 1) one on each backrest, minimum size DIN A4. Detailed design shall be defined by the seat supplier;
- h) life vest pockets:
- 1) for calculation purposes three life vest pockets, one under each seat place, designed for a life vest size of 240 mm × 240 mm × 90 mm and shall be calculated at a weight of 0,600 kg/life vest (e.g. three life vest pockets = 1,800 kg);
- i) trim and finish:
- 1) for calculation purposes seat cover fabric shall be calculated at 0,750 kg/m<sup>2</sup>;
  - 2) all plastic fairings for armrests shall be included;
  - 3) trolley guard strip (rub strips) on aisle side;

**prEN 4727:2024 (E)**

- 4) armrest covers;
- 5) backrest fairings;
- 6) any typical decorative material [e.g. decorative sheet material (DSM), plastics, (paint), powder coating, textiles, leathers and imitation leathers];
- j) trim strips (e.g. edge protection tape, hook and loop tapes).

The weight impact of any offered option like ashtrays, cup holders, coat hooks, leg or footrest, floatation cushions, IFE or IFE provisions (like shroud or swivel mechanism, etc.) shall be indicated separately in the template according to Clause 6.

IFE shall include all equipment to enable the IFE function. Those are e.g.:

- 1) IFE monitor (if in-seat video is offered);
- 2) one SEB;
- 3) three PCUs (if not already covered within 1);
- 4) needed in-seat cables.

As the specific weight of IFE equipment is varying, the classification for in-seat power per pax shall be used according to Table 1 and the classification for IFE including in-seat power per pax shall be used according to Table 2.

**Table 1 — Classification for in-seat power**

<b>Classification</b>	<b>In-seat power weight per pax kg</b>
Class A	< 0,750
Class B	0,750 to 1,500
Class C	> 1,500

**Table 2 — Classification for IFE including in-seat power**

<b>Classification</b>	<b>Total IFE weight per pax kg</b>
Class D	< 2,750
Class E	2,750 to 4,000
Class F	> 4,000

### 5.2.2 Seat categories V through VI

Category V through VI seats are very different and often highly customized. The catalogue seat weight shall be defined by the seat supplier. The weight information shall be based on the same fabric, seat belt and life vest information as defined for seat categories I through IV. The remaining detailed design shall be defined by the seat supplier, but a list of considered features and options including IFE and monitor size shall be provided by the seat supplier with the catalogue seat weight.