



**SLOVENSKI STANDARD**  
**oSIST prEN 17684:2022**  
**01-julij-2022**

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**Pohištvo - Pohištvo z električnim pogonom - Zahteve za stabilnost, trdnost, trajnost in mehansko varnost**

Furniture - Electrically operated furniture - Stability, strength, durability and mechanical safety requirements

Möbel - Elektrisch angetriebene Möbel - Standsicherheit, Festigkeit, Dauerhaltbarkeit und mechanische Sicherheitsanforderungen

Mobilier - Meubles à commande électrique - Exigences de stabilité, de résistance, de durabilité et de sécurité mécanique

**Ta slovenski standard je istoveten z: prEN 17684**

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**ICS:**

97.140          Pohištvo          Furniture

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**DRAFT**  
**prEN 17684**

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ICS 97.140

English Version

## Furniture - Electrically operated furniture - Stability, strength, durability and mechanical safety requirements

Mobilier - Meubles à commande électrique - Exigences de stabilité, de résistance, de durabilité et de sécurité mécanique

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

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

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**prEN 17684:2022 (E)**

## **European foreword**

This document (prEN 17684:2022) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

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## Introduction

This document is a type-C document as stated in EN ISO 12100:2010.

This document is of relevance, in particular, for the following stakeholder groups representing the market players with regard to machinery safety:

- electrically operated furniture manufacturers (small, medium and large enterprises);
- health and safety bodies (regulators, accident prevention organizations, market surveillance, etc.).

Others can be affected by the level of machinery safety achieved with the means of the document by the above-mentioned stakeholder groups:

- electrically operated furniture users/employers (small, medium and large enterprises);
- electrically operated furniture users/employees (e.g. trade unions, organizations for people with special needs);
- service providers, e.g. for maintenance (small, medium and large enterprises);
- consumers (in case of electrically operated furniture intended for use by consumers).

The above-mentioned stakeholder groups have been given the possibility to participate in the drafting process of this document.

The machinery concerned and the extent to which hazards, hazardous situations or hazardous events are covered are indicated in the Scope of this document.

When requirements of this type-C standard are different from those which are stated in type-A or type-B standards, the requirements of this type-C standard take precedence over the requirements of the other standards for machines that have been designed and built according to the requirements of this type-C standard.

This document has been prepared to meet the needs of manufacturers, users and safety enforcement authorities, with the primary purpose of providing design and performance for mechanical safety in use of electrically motorised furniture.

The safety requirements are based on the hazardous situations and events identified during intended use, and reasonably foreseeable misuse, throughout the expected lifetime of the furniture. The hazards identified in Clause 4 are based on the knowledge and experience of the design, incidents, accidents and other risks.

The requirements on edges, surfaces, shear and compression are intended to minimize the hazards from any moving parts, e.g. the movement of the product or the application or release of an external force by an electrically operated component.

The strength requirements are intended to minimize the hazards caused by the collapse of furniture when subjected to the highest levels of loading that might be reasonably expected to occur.

The durability requirements are intended to minimize the hazards during the expected lifetime of the product, e.g. when operating the electrical function.

It should be emphasized that the stability, strength and durability requirements are the same as for non-electrically operated furniture.

This document exclude any electrically operated furniture for medical purpose.

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Electrical aspects of electrically operated furniture are covered by normative references to prEN IEC 60335-2-116:2022.

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## 1 Scope

This document specifies stability and mechanical safety requirements and test methods for electrically operated furniture for domestic and non-domestic use, including requirements on shear, compression, entrapment, strength and durability.

The document applies to electrically operated furniture for use in areas accessible by adults and children of all abilities, and domestic pets.

The requirements in this document are intended to minimize the hazards that can occur during intended use and reasonably foreseeable use.

This document includes requirements related to all persons, including children from the age of 4 years in and around the products and the associated hazards.

This document excludes considerations and requirements related to children less than 4 years old operating the product.

This document does not include requirements related to the electrical safety of the item of furniture.

In general, it does not take into account:

- damage to property or the environment.

This document does not apply to:

- seating incorporated in other machines;
- seats in vehicles.

If the electrically operated furniture has additional functions or can be converted into other products, other relevant European Standards can apply.

This document is not applicable to electrically operated furniture which is manufactured before the date of publication of this document.

Wherever the term “furniture” is used in this document, it means electrically operated furniture.

## 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.

EN 527-2:2016+A1:2019, *Office furniture — Work tables — Part 2: Safety, strength and durability requirements*

EN 581-2:2015, *Outdoor furniture — Seating and tables for camping, domestic and contract use — Part 2: Mechanical safety requirements and test methods for seating*

EN 581-3:2017, *Outdoor furniture — Seating and tables for camping, domestic and contract use — Part 3: Mechanical safety requirements for tables*

EN 747-1:2012+A1:2015, *Furniture — Bunk beds and high beds — Part 1: Safety, strength and durability requirements*

EN 1023-2:2000, *Office furniture — Screens — Part 2: Mechanical safety requirements*

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EN 1129-1:1995, *Furniture — Foldaway beds — Safety requirements and testing — Part 1: Safety requirements*

EN 1335-2:2018, *Office furniture — Office work chair — Part 2: Safety requirements*

EN 1725:1998, *Domestic furniture — Beds and mattresses — Safety requirements and test methods*

EN 1729-2:2012+A1:2015, *Furniture — Chairs and tables for educational institutions — Part 2: Safety requirements and test methods*

EN 1730:2012, *Furniture — Tables — Test methods for the determination of stability, strength and durability*

EN 12520:2015, *Furniture — Strength, durability and safety — Requirements for domestic seating*

EN 12521:2015, *Furniture — Strength, durability and safety — Requirements for domestic tables*

EN 13150:2020, *Workbenches for laboratories in educational institutions — Dimensions, safety and durability requirements and test methods*

EN 13759:2012, *Furniture — Operating mechanisms for seating and sofa-beds — Test methods*

EN 14073-2:2004, *Office furniture — Storage furniture — Part 2: Safety requirements*

EN 14434:2010, *Writing boards for educational institutions — Ergonomic, technical and safety requirements and their test methods*

EN 14749:2016, *Furniture — Domestic and kitchen storage units and kitchen-worktops — Safety requirements and test methods*

EN 15372:2016, *Furniture — Strength, durability and safety — Requirements for non-domestic tables*

EN 16121:2013+A1:2017, *Non-domestic storage furniture — Requirements for safety, strength, durability and stability*

EN 16139:2013, *Furniture — Strength, durability and safety — Requirements for non-domestic seating*

EN 17191:2021, *Children's Furniture — Seating for children — Safety requirements and test methods*

EN ISO 12100:2010, *Safety of machinery — General principles for design — Risk assessment and risk reduction (ISO 12100:2010)*

prEN IEC 60335-2-116:2022, *Household and similar electrical appliances — Safety — Part 2-116: Particular requirements for furniture with electrically motorised parts*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological 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/>

#### 3.1

##### **children**

young persons comprising very young children, young children and older children

[SOURCE: EN 60335-1:2012, definition 3.Z.1]

#### 3.2

##### **very young children**

young persons aged from 0 up to and including 3 years

[SOURCE: EN 60335-1:2012, definition 3.Z.2]

#### 3.3

##### **young children**

young persons older than 3 years and younger than 8 years

[SOURCE: EN 60335-1:2012, definition 3.Z.3]

#### 3.4

##### **older children**

young persons aged from 8 years up to and including 14 years

[SOURCE: EN 60335-1:2012, definition 3.Z.4]

#### 3.5

##### **stability**

ability to withstand forces that tend to cause furniture to overturn

#### 3.6

##### **overturn**

event at which furniture pivots to the point beyond which the furniture continues to fall

#### 3.7

##### **hazard**

potential source of harm

[SOURCE: EN ISO 12100:2010, 3.6]

**prEN 17684:2022 (E)****3.8****relevant hazard**

hazard, which is identified as being present at, or associated with, the furniture

Note 1 to entry: A relevant hazard is identified as the result of one step of the process described in EN ISO 12100:2010, Clause 5.

Note 2 to entry: This term is included as basic terminology for type-B and type-C standards.

[SOURCE: EN ISO 12100:2010, 3.7]

**3.9****significant hazard**

hazard which has been identified as relevant and which requires specific action by the *designer* (3.10) to eliminate or to reduce the risk according to the risk assessment

Note 1 to entry: This term is included as basic terminology for type-B and type-C standards.

[SOURCE: EN ISO 12100:2010, 3.8]

**3.10****designer**

person who prepares or modifies the designs, or gives instructions to any person under their control to do so

**3.11****risk**

combination of the probability of occurrence of harm and the severity of that harm

**3.12****furniture**

article intended to support human activities such as sitting, eating, sleeping, working or storing things

[SOURCE: prEN 60335-2-116:2022, definition 3.5.101]

**3.13****nominal load**

load capacity of the *furniture* (3.12) declared by the manufacturer

**3.14****electrically operated functions**

movements of parts or components of *furniture* (3.12) by means of electrical actuators

Note 1 to entry: Such as drawers, tabletops, reclining seats, etc.

**3.15****leading edge**

closing edge of two components that is likely to create significant shear or compression points, which are easily accessible, and likely to cause injury

Note 1 to entry: One of the components could be the floor, ceiling or other structure.

## 4 Hazard identification and risk assessment

Annex A contains a list of hazards that can be present with electrically operated furniture (3.12). A hazard analysis shall be carried out to identify any further hazards that might be present.

A risk assessment shall be carried out on those hazards identified in the hazard identification. This risk assessment shall give particular consideration to:

- a) the intended operation of the furniture, including instructions available, maintenance, setting and cleaning;
- b) unexpected start-up/operation;
- c) access from all directions;
- d) reasonably foreseeable misuse of the furniture;
- e) the effect of failure in the control system;
- f) and where necessary, the hazards associated with the specific application.

Risks (3.11) shall be eliminated or reduced first by design or by substitution, then by guarding and other complementary measures. Any residual risks shall then be reduced by other measures (e.g. warnings, signs, training).

The requirements contained in Clause 5 derive from the iterative process consisting of applying safeguarding measures that are described in EN ISO 12100:2010 to the hazards identified in Annex A.

NOTE EN ISO 12100:2010 provides requirements and guidance in performing hazard identification and risk reduction.

The use and location of the furniture and the type of control system can influence the severity and probability of risk created by electrically operated furniture. Risks are increasing when:

- elderly or disabled people can come in contact with the moving parts of the furniture;
- children come in contact with the moving parts of the furniture;
- the furniture is equipped with a means of remote-control;
- the lack of visibility of a hazard;
- the velocity of the electrically operated moving parts relatively to other parts.

## 5 Safety requirements and/or protective risk reduction measures

### 5.1 General

The furniture shall comply with the safety requirements and/or protective/risk reduction measures of this clause. In addition, the furniture shall be designed according to the principles of EN ISO 12100:2010 for relevant but not significant hazards which are not dealt with by this document.

The requirements in this clause shall be verified using the specified test methods.

The tests may be carried out on an electrically operated furniture item representative of the production model.