

BS EN 581-1:2017



BSI Standards Publication

**Outdoor furniture — Seating  
and tables for camping,  
domestic and contract use**  
Part 1: General safety requirements

**National foreword**

This British Standard is the UK implementation of EN 581-1:2017. It supersedes BS EN 581-1:2006 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FW/0/2, Domestic and Contract Furniture.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

© The British Standards Institution 2017.  
Published by BSI Standards Limited 2017

ISBN 978 0 580 90134 8

ICS 97.140

**Compliance with a British Standard cannot confer immunity from legal obligations.**

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 March 2017.

**Amendments/corrigenda issued since publication**

Date	Text affected
------	---------------

---

EUROPEAN STANDARD

**EN 581-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2017

ICS 97.140; 97.200.30

Supersedes EN 581-1:2006

English Version

## Outdoor furniture - Seating and tables for camping, domestic and contract use - Part 1: General safety requirements

Mobilier d'extérieur - Sièges et tables à usage  
domestique, collectif et de camping - Partie 1 :  
Exigences générales de sécurité

Außenmöbel - Sitzmöbel und Tische für den Camping-,  
Wohn- und Objektbereich - Teil 1: Allgemeine  
sicherheitstechnische Anforderungen

This European Standard was approved by CEN on 9 January 2017.

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, Serbia, 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**

<b>Contents</b>	<b>Page</b>
<b>European foreword</b> .....	<b>3</b>
<b>1 Scope</b> .....	<b>4</b>
<b>2 Normative references</b> .....	<b>4</b>
<b>3 Terms and definitions</b> .....	<b>4</b>
<b>4 Test probes</b> .....	<b>5</b>
<b>Figure 1 — Measuring probes</b> .....	<b>5</b>
<b>5 Safety requirements</b> .....	<b>5</b>
<b>5.1 General</b> .....	<b>5</b>
<b>5.2 Tubular components</b> .....	<b>5</b>
<b>5.3 Shear and squeeze points</b> .....	<b>5</b>
<b>5.3.1 Shear and squeeze points when erecting, adjusting and folding away</b> .....	<b>5</b>
<b>5.3.2 Shear and squeeze points under the influence of powered mechanisms</b> .....	<b>5</b>
<b>5.3.3 Shear and squeeze points during use</b> .....	<b>6</b>
<b>6 Test report</b> .....	<b>6</b>
<b>Annex A (informative) Schematic presentation of requirements and conditions concerning shear and squeeze points</b> .....	<b>7</b>
<b>Figure A.1 — Schematic presentation of requirements and conditions concerning shear and squeeze points</b> .....	<b>7</b>
<b>Annex B (informative) Rationale for injury of fingers</b> .....	<b>8</b>

## European foreword

This document (EN 581-1:2017) has been prepared by Technical Committee CEN/TC 207 “Furniture”, the secretariat of which is held by UNI.

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 September 2017, and conflicting national standards shall be withdrawn at the latest by September 2017.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 581-1:2006.

Compared to EN 581-1:2006, the main modifications are:

- clarification of the definitions (camping, domestic and contract use) taken from Annex B and put in Clause 3 (so Annex B will be superseded),
- test method is deleted, edges and corners are modified to take into account accessible part during use (accessible parts for seating and tables are defined),
- tubular components are defined, requirements for gaps and holes removed,
- addition of an Annex B (informative) as a rationale to explain the risks covered with requirements in Clause 5.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## 1 Scope

This part of EN 581 specifies the general safety requirements for outdoor seating and tables for camping, domestic and contract for use by adults, without regard to materials, design/construction or manufacturing processes.

It does not apply to seating for spectator facilities.

It does not include requirements for the durability of upholstery materials, castors, reclining and tilting mechanisms and seat height adjustment mechanisms.

Mechanical safety requirements are covered by EN 581-2 for seating and EN 581-3 for tables.

Annex A (informative) is a schematic presentation of requirements and conditions concerning shear and squeeze points.

Annex B (informative) is a rationale concerning fingers injury.

## 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 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 581-3:2007, *Outdoor furniture - Seating and tables for camping, domestic and contract use - Part 3: Mechanical safety requirements and test methods for tables*

## 3 Terms and definitions

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

### 3.1

#### **automatic locking mechanism**

mechanism which engages without guidance by the user and prevents unintended movement

### 3.2

#### **shear and squeeze point**

shear and squeeze points exist if the distance between two accessible parts moving relative to each other can be more or equal than 7 mm and less or equal than 18 mm in any position during movement

### 3.3

#### **outdoor furniture for contract use**

outdoor furniture intended for non-private use in places with public access

### 3.4

#### **outdoor furniture for domestic use**

outdoor furniture intended for private use in places without public access

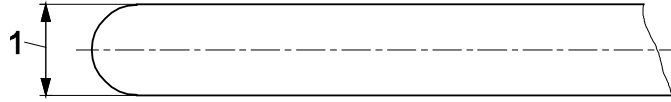
### 3.5

#### **outdoor furniture for camping use**

outdoor furniture foldable or knock-down and light-weight, intended for use in connection with camping and travelling

## 4 Test probes

There shall be three cylindrical probes with diameters of  $7_{-0,1}^{+0}$  mm,  $12_{-0}^{+0,1}$  mm and  $18_{-0}^{+0,1}$  mm with hemispherical ends, see Figure 1.



### Key

1  $\varnothing 7_{-0,1}^{+0}$  mm,  $\varnothing 12_{-0}^{+0,1}$  mm and  $\varnothing 18_{-0}^{+0,1}$  mm

Figure 1 — Measuring probes

## 5 Safety requirements

### 5.1 General

In order to avoid physical injury when the product is in its intended position of use, all edges and corners shall be rounded, chamfered or otherwise protected. This applies to:

- Seating: Edges of the seat, back rest and arm rests and any part of the bottom surface of the seat at a distance less than 120 mm from any edge, where a finger can commonly access;
- Tables: Table tops, any part of the underside of the top surface at a distance less than 500 mm from any edge below the table, where a knee and/or an arm can commonly access.

All other parts shall be free from burrs, sharp edges and sharp points.

Movable and adjustable parts shall be designed so that injuries and inadvertent operation are avoided.

It shall not be possible for any load bearing part of the furniture to come loose unintentionally.

All parts which are lubricated to assist sliding shall be designed to protect users from lubricant stains when in normal use.

### 5.2 Tubular components

There shall be no accessible holes in the ends of tubular components with a diameter between 7 mm to 12 mm and with a depth more or equal to 10 mm.

The bottom of tubular legs in contact with the floor shall be closed or capped, however, holes in them are allowed as long as they are not between 7 and 12 mm.

These requirements shall be assessed using the test probes (Clause 4).

### 5.3 Shear and squeeze points

#### 5.3.1 Shear and squeeze points when erecting, adjusting and folding away

Unless 5.3.2 or 5.3.3 are applicable, shear and squeeze points that are created only during erecting, adjusting or folding away are acceptable providing the user can be assumed to be in control of his/her movements and to be able to cease applying the force immediately on experiencing pain.

#### 5.3.2 Shear and squeeze points under the influence of powered mechanisms

There shall be no accessible shear and squeeze points created by parts of the furniture operated by powered mechanisms, e.g. mechanical springs and gas lifts.

This requirement shall be assessed using the test probes (Clause 4).

### 5.3.3 Shear and squeeze points during use

There shall be no accessible shear and squeeze points created by loads applied during normal use. Shear and squeeze points are not acceptable if there is a risk of injury created by the weight of the user during normal movements and actions, e.g. attempting to move the seating by lifting the seat or by adjusting the backrest.

This requirement shall be assessed using the test probes (Clause 4).

For loungers, the loads applied during normal use are the loads used for the following mechanical tests in Table 1 of EN 581-2:2015:

- Test 2: Additional seat and leg rest static load;
- Test 3: Seat and back durability;
- Test 4: Additional seat durability;
- Test 5: Durability on back rest mechanism.

For other seating, the loads applied during normal use are the loads used for the following mechanical tests in Table 2 of EN 581-2:2015:

- Test 2: Seat front edge static;
- Test 3: Combined seat and back durability;
- Test 4: Durability test on seating with a multi-position back.

For tables, the loads applied during normal use are the loads used for the following mechanical tests in Table 1 of EN 581-3:2007:

- Test 1: Vertical static load on main surface;
- Test 4: Vertical static load on ancillary surface;
- Test 5: Horizontal durability test.

## 6 Test report

The test report shall include at least the following information:

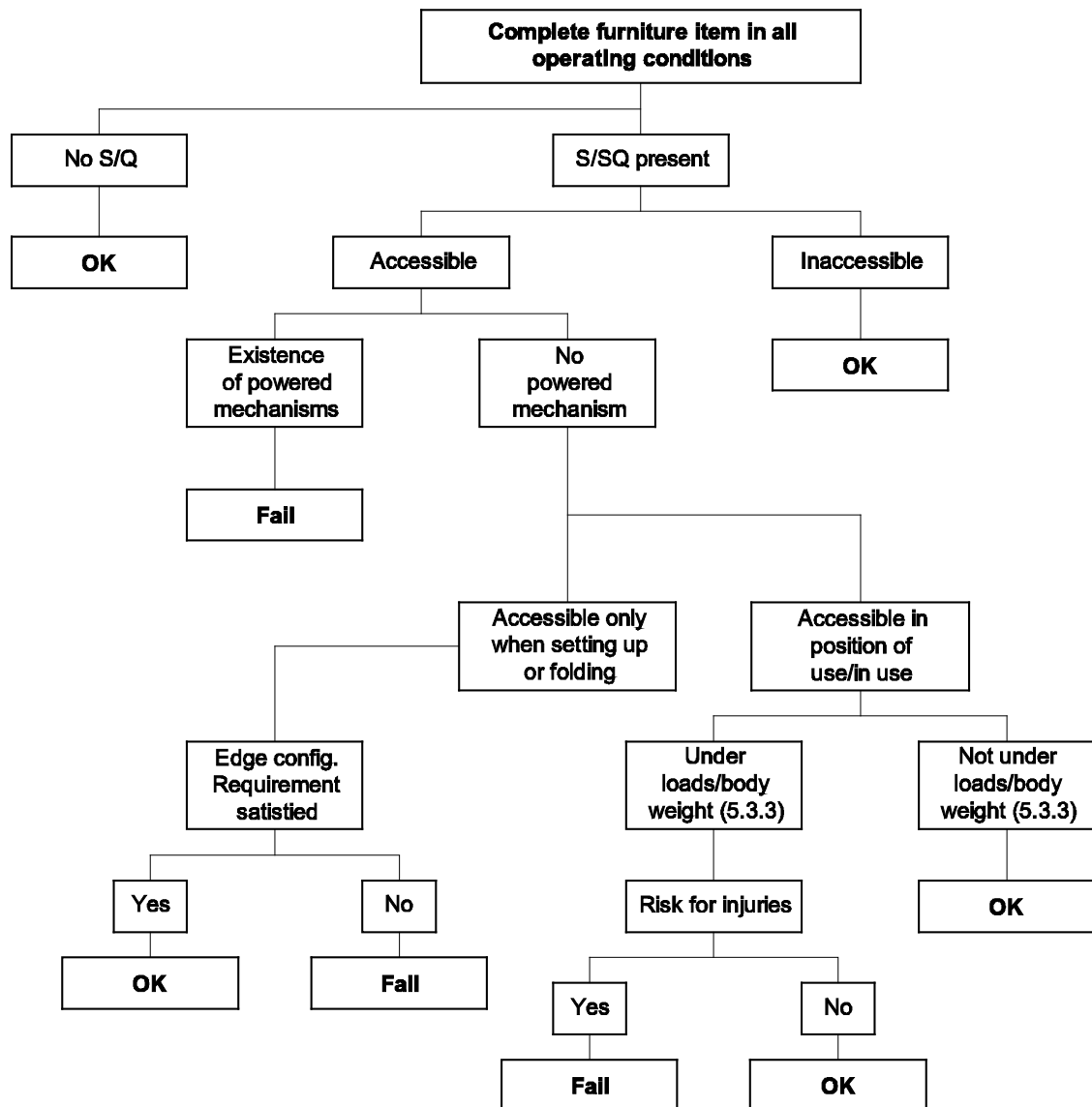
- a) reference to this part of the European Standard (EN 581-1:2017);
- b) details of piece of furniture tested;
- c) any defects observed before testing;
- d) the test results according to the applicable clauses;
- e) compliance with the requirements;
- f) the name and address of the test facility;
- g) the date of test.



**Annex A**  
(informative)

**Schematic presentation of requirements and conditions concerning shear and squeeze points**

Figure A.1 is a Schematic presentation of requirements and conditions concerning shear and squeeze points.



**Figure A.1 — Schematic presentation of requirements and conditions concerning shear and squeeze points**

**Annex B**  
(informative)

**Rationale for injury of fingers**

<b>Clause</b>	<b>Title</b>	<b>Risk cover</b>
5.1	General	Risk of cutting a part of the user's body when in contact with the product
5.2	Tubular components	Finger entrapment in holes on tubular component and damage on floors
5.3	Shear and squeeze points	Shearing and squeezing of fingers, thumbs excluded



# British Standards Institution (BSI)

BSI is the national body responsible for preparing British Standards and other standards-related publications, information and services.

BSI is incorporated by Royal Charter. British Standards and other standardization products are published by BSI Standards Limited.

## About us

We bring together business, industry, government, consumers, innovators and others to shape their combined experience and expertise into standards-based solutions.

The knowledge embodied in our standards has been carefully assembled in a dependable format and refined through our open consultation process. Organizations of all sizes and across all sectors choose standards to help them achieve their goals.

## Information on standards

We can provide you with the knowledge that your organization needs to succeed. Find out more about British Standards by visiting our website at [bsigroup.com/standards](http://bsigroup.com/standards) or contacting our Customer Services team or Knowledge Centre.

## Buying standards

You can buy and download PDF versions of BSI publications, including British and adopted European and international standards, through our website at [bsigroup.com/shop](http://bsigroup.com/shop), where hard copies can also be purchased.

If you need international and foreign standards from other Standards Development Organizations, hard copies can be ordered from our Customer Services team.

## Copyright in BSI publications

All the content in BSI publications, including British Standards, is the property of and copyrighted by BSI or some person or entity that owns copyright in the information used (such as the international standardization bodies) and has formally licensed such information to BSI for commercial publication and use.

Save for the provisions below, you may not transfer, share or disseminate any portion of the standard to any other person. You may not adapt, distribute, commercially exploit, or publicly display the standard or any portion thereof in any manner whatsoever without BSI's prior written consent.

## Storing and using standards

Standards purchased in soft copy format:

- A British Standard purchased in soft copy format is licensed to a sole named user for personal or internal company use only.
- The standard may be stored on more than 1 device provided that it is accessible by the sole named user only and that only 1 copy is accessed at any one time.
- A single paper copy may be printed for personal or internal company use only.

Standards purchased in hard copy format:

- A British Standard purchased in hard copy format is for personal or internal company use only.
- It may not be further reproduced – in any format – to create an additional copy. This includes scanning of the document.

If you need more than 1 copy of the document, or if you wish to share the document on an internal network, you can save money by choosing a subscription product (see 'Subscriptions').

## Reproducing extracts

For permission to reproduce content from BSI publications contact the BSI Copyright & Licensing team.

## Subscriptions

Our range of subscription services are designed to make using standards easier for you. For further information on our subscription products go to [bsigroup.com/subscriptions](http://bsigroup.com/subscriptions).

With **British Standards Online (BSOL)** you'll have instant access to over 55,000 British and adopted European and international standards from your desktop. It's available 24/7 and is refreshed daily so you'll always be up to date.

You can keep in touch with standards developments and receive substantial discounts on the purchase price of standards, both in single copy and subscription format, by becoming a **BSI Subscribing Member**.

**PLUS** is an updating service exclusive to BSI Subscribing Members. You will automatically receive the latest hard copy of your standards when they're revised or replaced.

To find out more about becoming a BSI Subscribing Member and the benefits of membership, please visit [bsigroup.com/shop](http://bsigroup.com/shop).

With a **Multi-User Network Licence (MUNL)** you are able to host standards publications on your intranet. Licences can cover as few or as many users as you wish. With updates supplied as soon as they're available, you can be sure your documentation is current. For further information, email [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com).

## Revisions

Our British Standards and other publications are updated by amendment or revision.

We continually improve the quality of our products and services to benefit your business. If you find an inaccuracy or ambiguity within a British Standard or other BSI publication please inform the Knowledge Centre.

## Useful Contacts

### Customer Services

**Tel:** +44 345 086 9001

**Email (orders):** [orders@bsigroup.com](mailto:orders@bsigroup.com)

**Email (enquiries):** [cservices@bsigroup.com](mailto:cservices@bsigroup.com)

### Subscriptions

**Tel:** +44 345 086 9001

**Email:** [subscriptions@bsigroup.com](mailto:subscriptions@bsigroup.com)

### Knowledge Centre

**Tel:** +44 20 8996 7004

**Email:** [knowledgecentre@bsigroup.com](mailto:knowledgecentre@bsigroup.com)

### Copyright & Licensing

**Tel:** +44 20 8996 7070

**Email:** [copyright@bsigroup.com](mailto:copyright@bsigroup.com)

### BSI Group Headquarters

389 Chiswick High Road London W4 4AL UK