



Institut luxembourgeois de la normalisation  
de l'accréditation, de la sécurité et qualité  
des produits et services

## ILNAS-EN 17902:2023

### **Furniture - Circularity - Evaluation method for dis/re-assembly capability**

Ameublement - Circularité - Exigences et  
méthodes d'évaluation pour le  
démontage/remontage

Möbel - Zirkularität -  
Bewertungsmethode für die Demontier-/  
Remontierbarkeit

12/2023



## National Foreword

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English Version

**Furniture - Circularity - Evaluation method for dis/re-  
assembly capability**

Ameublement - Circularité - Exigences et méthodes  
d'évaluation pour le démontage/remontage

Möbel - Zirkularität - Anforderungen und  
Bewertungsmethoden für die Demontage/Remontage

This European Standard was approved by CEN on 20 November 2023.

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

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## European foreword

This document (EN 17902:2023) 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of an identical text or by endorsement, at the latest by June 2024, and conflicting national standards shall be withdrawn at the latest by June 2024.

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.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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## Introduction

This document aims to support the furniture manufacturers in aligning their product (3.1) and development processes with circular economy (CE) through the ability to dis/re-assembly a product, which is an enabler of several CE aspects namely replaceability, upgradability, reuse, repair, refurbishment, remanufacturing, recycling.

These CE aspects allow to develop long lasting products and to enable the extension of the product lifespan and the circular flow of products by recovering, retaining, or adding to their value and thus maintaining their usability for as long as possible and reducing the consumption of primary resources.

Under circular economy framework, a degree of alignment with the CE principles is connected to implementation of CE aspects. Understanding of the implementation requires different evaluation methodologies for each key aspect. This is the first of a series of standards planned to be published by CEN/TC 207-Furniture. Each standard will provide an evaluation methodology for one or more relevant CE aspects. The document can be used as a guide by furniture manufacturers and/or product designers to understand dis/re-assembly capability of their design.

Product design brings complex trade-off decisions. For example, a product could be designed to last several decades that it is not intended to be dis- and re-assembled. This doesn't mean that the product is less circular than another product. This situation shows the importance of a complete evaluation according to different aspects of CE and circular product design criteria.

This document provides a guidance on

- How to determine a priority part (3.3) (see Clause 4);
- What criteria should be considered for a damage-free and easy dis/re-assembly operation (see Clause 5);
- The proposed classes to assess each criteria.

It should be noted that there can be differences concerning the appropriateness and assessment of some criteria when considering end use of some furniture such as domestic use, use by vulnerable groups or commercial use. Similarly, this applies in cases where, for safety reasons, the ability to disassemble and reassemble the product applies to groups of users and their skills sets as defined by the manufacturer.

As noted, some types of furniture may not be suitable for dis/re-assembly by the end user, such as upholstered furniture, which may need a trained/educated person or specialist to re-upholster a product, or work with electrically operated furniture which may pose serious safety risk during dis/re-assembly process. The previously exemplified framework conditions should not mean that a product is less “circular” than another but should allow the manufacturer the ability to address these issues and/or enable corresponding service offers by economic operators.

The safety and performance of most furniture can be aided by the use of suitable standards developed within the technical committee, CEN/TC 207 - Furniture.

This document includes an informative annex:

Annex A: Content of dis/re-assembly instructions.

## 1 Scope

This document provides guidelines for one aspect of circular economy framework; disassembly and reassembly capability.

This document establishes a set of criteria on which to base an assessment of the ability to access and remove/replace/reassemble priority parts of products. The criteria provided are intended to be used when designing a product and are applicable to different designs, materials, or construction methods.

This document does not include requirements.

The document does not apply to disassembly operation for the sole purpose of separating the individual materials.

This document does not provide a method to evaluate the overall degree of circularity of furniture products. For this, additional complementary evaluation methods for other aspects are necessary.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

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

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

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

### 3.1

#### **product**

physical-based object designed or utilized as furniture in domestic, office, public, outdoor areas, educational and other institutions

### 3.2

#### **part**

sub-unit of a *product* (3.1), including connectors and fasteners as parts

[SOURCE: EN 45558:2019, modified]

### 3.3

#### **priority part**

*part* (3.2) or parts of a product that have been identified to be disassembled and reassembled which are relevant to enable the corresponding circular strategy considered

### 3.4

#### **disassembly**

process whereby a *product* (3.1) is partially or fully taken apart in such a way that it could subsequently be reassembled and is made operational

**3.5****reassembly**

process whereby a *product* (3.1) is assembled in such a way that it is made operational

**3.6****disassembly step**

each stage of the process that ends with the removal of a *part* (3.2)

**3.7****assembly step**

each stage of the process that ends with the assembly of a *part* (3.2)

**3.8****disassembly depth**

number of *disassembly steps* (3.6) required to remove a *priority part* (3.3) from a *product* (3.1)

**3.9****assembly depth**

number of *assembly steps* (3.7) required to reassemble a *priority part* (3.3) of a *product* (3.1)

**3.10****main visible surface**

surface that is visible in the normal position of use

**3.11****secondary visible surface**

surface which is not directly visible in the normal position of use

**3.12****non visible surface**

surface parts not visible in normal position of use

**4 Priority part determination****4.1 General principals**

A central characteristic of a sustainable product is its durability and the associated lifespan of the whole product. For disassembly and reassembly priority is given to parts that are important to the use- and appearance-function of the furniture and are most likely to be disassembled and reassembled during the lifespan of the product for a variety of reasons. The reasons may be related to the product design, durability features, function, aesthetic aspects and/or external factors (see 4.2 and 4.3).

The lifespan of the product is determined by the strength and durability of the individual parts, material composition and their connection. The strength and durability of these parts and thus of the product can be determined by the manufacturer, considering the intended use, based on experience and data from products on the market or through testing etc.

The determination of priority parts (3.3) can only be done in the corresponding context of the circular strategy. Circular economy model intends to keep the resources in the productive cycle prioritising