

# Environmental Product Declaration



In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## ***Floater 84113 (easy chair variant)***

from

***COR Sitzmöbel Helmut Lübke GmbH & Co. KG***



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
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*An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at [www.environdec.com](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD <sup>®</sup> System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
<b>E-mail:</b>	<a href="mailto:info@environdec.com">info@environdec.com</a>

### Accountabilities for PCR, LCA and independent, third-party verification

#### Product Category Rules (PCR)

CEN standard EN 15804 serves as the Core Product Category Rules (PCR)

Product Category Rules (PCR): *PCR 2019:14-c-PCR-021 Furniture (c-PCR to PCR 2019:14)*

#### Life Cycle Assessment (LCA)

LCA accountability: *Luke Schneider, uniconsult GmbH*

#### Third-party verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:

☒ EPD verification by individual verifier

Third-party verifier: *Andreas Ciroth, GreenDelta*

Approved by: The International EPD<sup>®</sup> System

Procedure for follow-up of data during EPD validity involves third party verifier:

☐ Yes ☒ No, the follow up is being conducted by COR

The EPD owner has the sole ownership, liability, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

## Revision history

2024-03-14	First publication
2024-04-29	Brief changes in the parts “company information” and “additional sustainability information”.

## Company information

Owner of the EPD: COR Sitzmöbel Helmut Lübke GmbH & Co. KG

Contact: Berenike Austermann, b.austermann@cor.de

Description of the organisation: COR is a family business which has been creating high quality furniture since 1954.

Product-related or management system-related certifications: Blauer Engel, Greenguard Gold, GS Zertifikat

Name and location of production site(s): One production site at Nonenstraße 12, 33378 Rheda-Wiedenbrück

## Product information

Product name: Floater easy chair variant

Product identification: Article number: 84113

Product description: The Floater is a modular sofa system with high or low back board and can be assembled with up to three seating units. Further modules can be added like shelves or arm rests made of different woods. The Floater is intended to be used as furniture for seating over the course of its 15 year lifetime. Included in this product is a work table made of wood.

UN CPC code: 38112

Geographical scope: The manufacturing occurs on site in Germany (DE), while many of the pre products are manufactured in Europe (RER). The use phase is global due to customers in many different countries and so is the end-of-life phase.

## LCA information

Functional unit / declared unit: The production of one Floater (easy chair variant) for the distribution and use globally.

Reference service life: The product life is assumed to be at least 15 years including the possibility of repairs of parts in this timespan. Therefore, a reference service life of 15 years is declared.

Time representativeness: Most data for the processes are collected with the year 2022 as its reference.

Database(s) and LCA software used:

Database: ecoinvent version 3.8 including EN 15804 add-on for ecoinvent 3.8

Software: openLCA 2.1.0

Description of system boundaries:

The product system is modelled as cradle to grave and module D (A + B + C + D). Phases B1, B2, B5, B6, B7 and were excluded or have results set to 0 due to them causing only negligible environmental impacts. For cutoff criteria, the database specific criteria were used for secondary data. For primary datapoints, material was cutoff only when it did not exceed 1 % of total product weight and the total cutoff material did not exceed 5 % of total product weight. No allocation procedure was necessary in this product system. Allocation used in Ecoinvent 3.8 environmental data sources follows the methodology 'allocation, cut-off by classification. A modelling of capital goods or infrastructure was excluded in this study.

### A1 – A3

The product stage includes the manufacture of parts and materials, the transportation of these to the production site of COR and the production of the Floater at COR.

A1 includes secondary (ecoinvent) data and information from EPDs for any pre-product, part and packaging material used in the manufacturing on site at COR.

A2 includes the distance information from suppliers to estimate the amount and type of transportation for shipping to the manufacturing site.

A3 includes the demand for electricity and the disposal of waste from manufacture. The manufacturing processes are woodcutting, frame assembly, sewing, gluing using machinery and manual labour. Only

electricity is used as energy source for the manufacture. A certified renewable energy source (hydro power is being used with a GHG-GWP of 0 kg CO<sub>2</sub> eq/kWh. This was modelled using the ecoinvent dataset “electricity production, hydro, run-of-river | electricity, high voltage | EN15804”. Losses for electricity transmission were included in this datapoint. Leftover woodcuttings are used as fuel for office heating.

#### A4 – A5

The construction process stage includes only the transportation to the customers of COR. Transport to countries in the European Union is primarily done by lorry while overseas transport is assumed to be performed by cargo ships (70 %), lorry (20 %) and cargo plane (10 %). The assembly of furniture is done entirely using manual work, so that in A5 only the impacts related to the disposal of packaging were included.

#### B1 – B7

The use stage only includes impacts from repair (B3) and replacement (B4) of broken parts during the use of the Floater. Currently, about 0,4 % of Floater Products needed a repair during the reference service life. For the repair processes in B3, the transportation of materials to the customer is included as well as the replaced parts in B4. An average transportation distance of 50 km was assumed in this model.

#### C1 – C4

In the end-of-life stage, average amounts for the transport of products to recycling and disposal plants are included in C2. Further processing of wood waste into wood chips for use in other systems is included in C3 and further waste processing of any other materials are included in C4. Global average processes were assumed for the waste processing due to the global shipping of products.

#### D

The benefits and loads beyond the system boundary include the ones that are declared in EPDs of materials and the reuse potential of wood chips from disposal of the product.

System diagram:**A1 – A2 Production of parts by suppliers**

- A1: Production of raw material and manufacture of purchased parts, materials and packaging
- A2: Transportation of these goods to the site

**A3 Manufacturing at site**

- Development
- Production (frame manufacturing, upholstery, cutting, sewing, quality inspection, packaging)
- Waste handling
- Electricity consumption
- Water consumption
- Maintenance

**A4, A5, B3, B4, C2 – C4 Transport, Use and Disposal**

- Delivery to customer
- Repairs
- Use phase
- Disposal of packaging and product

**D Resource recovery**

- Recycling potential of parts after disposal

More information:

COR Website: <https://www.cor.de/en/home>

Name and contact information of LCA practitioner: Luke Schneider, [luke.schneider@unico.de](mailto:luke.schneider@unico.de),  
uniconsult GmbH

Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	ND	ND	X	X	ND	ND	ND	X	X	X	X	X
Geography	GLO	RER	DE	RER	GLO	-	-	DE	DE	-	-	-	-	GLO	GLO	GLO	GLO
Specific data used	100%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0%			-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Content information for one Floater product

Product components	Weight, kg	Biogenic material, weight-%	Biogenic material kg C
Wood	70.3	41.5	35.15
Wool	7.2	4.3	3.6
Steel	0.3	0	0
Plastics (PE, PA, TDI/MDI)	5.9	0	0
Cotton	1	0.6	0.5
TOTAL	84.7	46.4	39.25
Packaging materials (inland)	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C
Cardboard	11.9	14	8.9
Plastic foil	0.01	0	0
Wooden pallet	2.5	3	2.3
TOTAL	14.41	17	11.2
Packaging materials (overseas)	Weight, kg	Weight-% (versus the product)	Weight biogenic carbon, kg C
Cardboard	14.2	16.8	10.7
Plastic foil	0.01	0	0
Medium Density Fibreboard (MDF)	1.85	2.2	1.4
Wooden pallet	2.5	3	2.3
TOTAL	18.56	21	14.4

## Results of the environmental performance indicators

The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks.

The use of only the results of modules A1 – A3 is only encouraged when considering the results of module C.

### Mandatory impact category indicators according to EN 15804

Results per functional unit											
Indicator	Unit	A1-A3	A4	A5	B3	B4	C1	C2	C3	C4	D
GWP-fossil	kg CO <sub>2</sub> eq.	2,22E+02	2,29E+00	4,34E-01	3,73E-01	7,15E-01	0.00E+00	6,70E-01	9,74E-02	2,01E+01	-5,27E+00
GWP-biogenic	kg CO <sub>2</sub> eq.	-8,92E+01	3,79E-03	2,13E+01	1,09E-03	-2,51E+01	0.00E+00	2,47E-03	3,51E-03	9,73E+01	-6,92E-02
GWP-luluc	kg CO <sub>2</sub> eq.	1,09E+00	1,80E-03	1,42E-04	2,39E-04	1,68E-02	0.00E+00	4,50E-03	2,24E-04	1,12E-03	-1,38E-03
GWP-total	kg CO <sub>2</sub> eq.	1,34E+02	2,30E+00	2,18E+01	3,75E-01	-2,44E+01	0.00E+00	6,77E-01	1,01E-01	1,17E+02	-5,34E+00
ODP	kg CFC 11 eq.	9,57E-06	5,30E-07	3,33E-08	7,83E-08	1,30E-07	0.00E+00	1,42E-07	4,89E-09	9,89E-08	-3,63E-08
AP	mol H <sup>+</sup> eq.	8,65E-01	1,39E-02	3,52E-03	2,09E-03	4,14E-03	0.00E+00	3,69E-03	5,20E-04	2,82E-02	-1,16E-02
EP-freshwater	kg P eq.	3,53E-02	1,32E-04	6,16E-05	5,63E-05	2,96E-04	0.00E+00	5,56E-05	9,45E-05	4,30E-04	-1,40E-04
EP-marine	kg N eq.	4,05E-01	4,88E-03	1,81E-03	6,34E-04	1,42E-03	0.00E+00	1,32E-03	9,20E-05	1,38E-02	-3,10E-03
EP-terrestrial	mol N eq.	2,95E+00	5,33E-02	1,60E-02	6,96E-03	1,46E-02	0.00E+00	1,42E-02	8,06E-04	1,43E-01	-3,21E-02
POCP	kg NMVOC eq.	5,37E-01	1,47E-02	3,90E-03	2,15E-03	7,81E-03	0.00E+00	4,05E-03	2,23E-04	3,37E-02	-8,31E-03
ADP-minerals&metals*	kg Sb eq.	5,63E-04	5,96E-06	1,31E-06	5,42E-06	2,41E-06	0.00E+00	2,20E-06	2,55E-07	3,55E-06	-1,53E-06
ADP-fossil*	MJ	2,37E+03	2,42E+00	9,80E-01	6,63E-01	2,26E+00	0.00E+00	1,19E+00	9,81E-01	1,13E+01	-7,27E+01
WDP*	m <sup>3</sup>	3,32E+02	1,52E-01	5,72E-01	4,39E-02	2,48E-01	0.00E+00	5,77E-02	7,46E-02	2,53E+00	-9,07E-01
Acronyms	GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption										

*\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*



## Additional mandatory and voluntary impact category indicators

Results per functional or declared unit											
Indicator	Unit	A1-A3	A4	A5	B3	B4	C1	C2	C3	C4	D
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	2,24E+02	2,30E+00	4,34E-01	3,73E-01	7,31E-01	0.00E+00	6,74E-01	9,77E-02	2,01E+01	-5,27E+00

## Resource use indicators

Results per functional or declared unit											
Indicator	Unit	A1-A3	A4	A5	B3	B4	C1	C2	C3	C4	D
PERE	MJ	2,39E+02	3,14E-01	7,46E-02	1,27E-01	5,33E-01	0.00E+00	9,22E-02	3,04E-01	1,98E-01	-3,81E-01
PERM	MJ	2,66E+03	1,12E-01	3,43E-02	2,68E-02	2,73E+02	0.00E+00	8,11E-02	5,25E-02	1,44E+00	-4,33E+01
PERT	MJ	3,92E+03	4,26E-01	1,09E-01	1,53E-01	2,73E+02	0.00E+00	1,73E-01	3,56E-01	8,23E+00	-7,19E+01
PENRE	MJ	5,86E+02	3,02E+00	1,08E+00	9,33E-01	3,72E+00	0.00E+00	1,35E+00	1,94E+00	3,61E+00	-2,50E+00
PENRM	MJ	3,03E+03	3,16E+01	2,30E+00	4,74E+00	8,10E+00	0.00E+00	8,96E+00	4,96E-01	1,68E+01	-7,38E+01
PENRT	MJ	1,63E+03	3,47E+01	3,38E+00	5,67E+00	1,18E+01	0.00E+00	1,03E+01	2,43E+00	1,24E+01	-4,90E+00
SM	kg	2,55E+01	2,89E-02	1,80E-02	1,07E-02	3,83E-01	0.00E+00	8,13E-03	2,68E-02	7,76E-02	-1,41E+01
RSF	MJ	2,20E+00	8,19E-03	8,75E-04	3,71E-03	2,16E-02	0.00E+00	1,32E-03	1,48E-02	2,22E-03	-1,80E-02
NRSF	MJ	5,05E+00	3,00E-02	1,98E-03	4,04E-03	3,46E-02	0.00E+00	2,85E-03	9,72E-03	6,41E-02	-4,38E-02
FW	m <sup>3</sup>	1,12E+01	3,64E-03	1,34E-02	1,05E-03	6,87E-03	0.00E+00	1,42E-03	1,74E-03	9,32E-03	-2,48E-03
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water										

<sup>1</sup> This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO<sub>2</sub> is set to zero.

## Waste indicators

Results per functional or declared unit											
Indicator	Unit	A1-A3	A4	A5	B3	B4	C1	C2	C3	C4	D
Hazardous waste disposed	kg	1,13E+02	6,71E-01	3,36E-01	3,29E-01	8,78E-01	0.00E+00	2,77E-01	4,62E-01	1,27E+00	-7,30E-01
Non-hazardous waste disposed	kg	1,04E+01	1,85E+00	1,38E+01	1,69E-01	3,02E-01	0.00E+00	6,91E-01	1,01E-02	6,39E+01	-1,73E-01
Radioactive waste disposed	kg	8,03E-02	6,15E-04	6,42E-05	2,01E-04	9,45E-04	0.00E+00	1,58E-04	5,88E-04	1,71E-04	-7,31E-04

## Output flow indicators

Results per functional or declared unit											
Indicator	Unit	A1-A3	A4	A5	B3	B4	C1	C2	C3	C4	D
Components for re-use	kg	-2,99E-18	-2,52E-20	-5,97E-21	1,05E-21	-6,33E-21	0.00E+00	-3,44E-20	1,87E-21	-5,88E-20	-6,74E-19
Material for recycling	kg	5,67E+00	2,36E-02	5,75E-03	8,33E-03	4,12E-02	0.00E+00	5,78E-03	2,49E-02	1,42E+01	-3,12E-02
Materials for energy recovery	kg	1,76E+01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0.00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy. electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy. thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

## Additional sustainability information

COR Sitzmöbel Helmut Lübke GmbH & Co. KG aims to continually improve their sustainability performance. A sustainability strategy, including the publication of sustainability reports, covers many environmental topics such as the Corporate Carbon Footprint which is being offset by purchasing reliable carbon credits. At the site, only renewable electricity from certified providers and own solar power generation are used in manufacturing. Biogas is being used to heat the exhibition sites and heating oil as well as waste wood from production are being used as fuel for heating of the production site. The company is member of the IHK initiative "Klimaneutral 2030" and of the B.A.U.M. e.V.

All CORs upholstered furniture is awarded the Blue Angel environmental label and other labels for furniture include LEED, WELL and Greenguard-Gold. All wood used in the furniture is certified FSC or PEFC. COR furniture is long living and easily repairable.

## References

ecoinvent, Allocation, cut-off by classification, ecoinvent database version 3.8 (2021)

EN ISO 14025:2010, Environmental labels and declarations – Type III environmental declarations – Principles and procedures

EN ISO 14040:2006, Environmental management – Life cycle assessment – Principles and framework

EN ISO 14044:2006, Environmental management -- Life cycle assessment – Requirements and Instructions

General Programme Instructions of the International EPD® System. Version 4.0.

Hintergrundbericht Floater Sessel (background report of the LCA study)

PCR 2019:14. Construction products. 1.3.3

PCR 2019:14-c-PCR-021 Furniture (c-PCR to PCR 2019:14)

