ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

Owner of the Declaration	nobilia-Werke J. Stickling GmbH & Co. KG
Publisher	Institut Bauen und Umwelt e.V. (IBU)
Programme holder	Institut Bauen und Umwelt e.V. (IBU)
Declaration number	EPD-NWJ-20260192-IBI1-EN
Issue date	08.07.2026
Valid to	07.07.2031

Wall cabinet

nobilia-Werke J. Stickling GmbH & Co. KG

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

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1. General Information

nobilia-Werke J. Stickling GmbH & Co. KG

Programme holder

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

Declaration number

EPD-NWJ-20260192-IBI1-EN

This declaration is based on the product category rules:

Domestic storage furniture, 01.08.2021
(PCR checked and approved by the SVR)

Issue date

08.07.2026

Valid to

07.07.2031

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Dr. Martina Bender
(Managing Director Institut Bauen und Umwelt e.V.)

Wall cabinet

Owner of the declaration

nobilia-Werke J. Stickling GmbH & Co. KG
Waldstraße 53 - 57
33415 Verl
Germany

Declared product / declared unit

The declared unit is 1 m³ gross storage volume. This is an EPD for a representative wall cabinet. All wall cabinets from nobilia-Werke J. Stickling GmbH & Co. KG are considered declared products.

Scope:

The representative EPD applies to the production sites of nobilia-Werke J. Stickling GmbH & Co. KG in Verl and Saarlouis. The production conditions at the Verl site are comparable to those at the Saarlouis site. They correspond to the technologies and standards used at all sites.
The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidence.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard is abbreviated as *EN 15804*.

Verification

The standard EN 15804 serves as the core PCR
Independent verification of the declaration and data according to ISO 14025:2011
☐ internal ☒ external

Manfred Russ,
(Independent verifier)

2. Product

2.1 Product description/Product definition

A wall cabinet for the kitchen is a compact wall-mounted cabinet that provides additional storage space above the worktop. It is ideal for storing crockery, glasses and supplies in an orderly fashion and can be flexibly integrated into various kitchen designs thanks to its different widths, heights, finishes and front designs.

The representative EPD 'Wall cabinet' applies to all wall cabinets manufactured by nobilia-Werke J. Stickling GmbH & Co. KG. Based on sales figures and technical characteristics, the wall cabinet with item number 'W60-1' and order number '32006' is considered to be the representative wall cabinet.

The product is not subject to any EU harmonization regulations. This means that the respective national regulations at the place of use apply to their use. In this context, kitchen furniture is classified at European level under the Product Safety Regulation. At national level, this is implemented in Germany by the Product Safety Act.

2.2 Application

A wall cupboard in the kitchen is ideal for space-saving storage of crockery, glasses, cups and bowls above the worktop. It also offers space for supplies such as tinned food, spices or pasta and keeps utensils within easy reach. This makes optimum use of vertical space, especially in small kitchens.

2.3 Technical data

DIN EN 14749:2022-07 'Furniture - Domestic and kitchen storage units and kitchen-worktops - Safety requirements and test methods' is considered the relevant product standard for the cabinets examined in this study. The cabinets meet all safety requirements and test methods specified in this standard.

In addition, the requirements of *DIN 68930:2025-07* 'Kitchen furniture and bathroom furniture - Fitness for purpose - Requirements and testing' with regard to the usability of kitchen furniture are also met.

Technical data

Name	Value	Unit
Safety requirements test DIN EN 14749	passed	-
Fitness for purpose test DIN 68930	passed	-

Performance data of the product with respect to its characteristics in accordance with the relevant technical provision (no CE-marking).

2.4 Delivery status

The cabinets leave the furniture factory already assembled. Each cabinet is individually packed with cardboard and strapping bands. The shelves are secured in the cabinet with transport fastenings for transport. The components that are only installed when the cabinet is assembled in the kitchen are packaged separately and included with the cabinet upon delivery.

The following table shows the possible variations in dimensions.

	Dimensions [mm]
Width	200 – 1200
Height	360 - 1296
Depth	350

2.5 Base materials/auxiliary materials

The material composition of the wall cabinet is shown in the following table:

Material	Proportion of the total mass of the product
Particle board	88 %
Medium density fiberboard	5 %
Metals	5 %
Plastics	2 %

1) 'This product/article/at least one partial article contains substances listed in *the candidate list* (date: 04.02.2026) exceeding 0.1 percentage by mass: yes"

The 'flap fitting' sub-component contains more than 0.1 percentage by mass of lead. This percentage refers to the sub-component. As this takes place in the upstream chain, no detailed statements can be made on this matter. Further information on this can be found in *ECHA's* SCIP database via the following link: https://echa.europa.eu/de/factsheet/-/factsheet/8962564

2) 'This product/article/at least one partial article contains other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on *the candidate list*, exceeding 0.1 percentage by mass: no'

3) 'Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) *Ordinance on Biocide Products No. 528/2012*): no'

In addition, the Chemicals Prohibition Ordinance applies to the wood-based materials used.

2.6 Manufacture

Production begins with cutting the pre-coated chipboard and MDF panels to size. In the next step, plastic or paper edge banding is applied as required. After temporary storage, the required panels, which have been cut to size and edged, are picked for the next production step. There, the required panels are drilled as needed. After glueing in dowels and attaching the necessary steel and plastic components, such as door hinges, the final assembly stage involves putting the cabinet together. A quality management system in accordance with *ISO 9001* is implied.

2.7 Environment and health during manufacturing

The wood waste generated during production is used to produce thermal energy for the buildings located at the plant. An environmental management system in accordance with *ISO 14001* is implemented for the production facilities.

2.8 Product processing/Installation

The cabinets are delivered fully assembled; only small components, such as the handle, need to be installed on site.

2.9 Packaging

The cabinets are delivered with cardboard boxes and plastic strapping. If necessary, the corners are protected with padded corner protectors and the shelves with plastic holders.
After transport, the packaging materials can be sorted by type and disposed of with the waste stream.

2.10 Condition of use

If used as intended, no material changes in composition are to be expected during the use phase.

2.11 Environment and health during use

If the cabinets are used as intended, their use will not have any negative effects on the environment or health.

2.12 Reference service life

A reference service life is not declared.
The service life depends on external influences. Under normal conditions, a service life of 35 years can be expected.

2.13 Extraordinary effects

Fire

From Table 8 of *EN 13986*, for chipboard and fibreboard > 18 mm thick:

Fire protection

Name	Value
Building material class	D
Burning droplets	s2
Smoke gas development	d0

Water

In the event of unexpected exposure to water, swelling of the chipboard is generally possible. This usually occurs through damaged surfaces. No negative consequences for the environment are to be expected in this case.

Mechanical destruction

Mechanical destruction is not expected to have any negative consequences for the environment.

2.14 Re-use phase

Re-use: A wall cabinet can be used in many different ways. Even after being removed from the kitchen, it can be reused.

Material recycling: The steel components can be recycled after being sorted by type.

Thermal recycling: Chipboard and MDF boards as well as plastic components can be thermally recycled.

2.15 Disposal

For packaging material:
EWC 15 01 01 Paper and cardboard packaging
EWC 15 01 02 Plastic packaging

For waste treatment of the product:
EWC 03 01 05 Sawdust, shavings, cuttings, wood, particle board and veneers
EWC 17 02 03 Plastics
EWC 17 04 02 Aluminium
EWC 17 04 05 Iron and steel

2.16 Further information

Further information on the products and other documents, such as the sustainability report, can be found at the following website: www.nobilia.de

3. LCA: Calculation rules

3.1 Declared unit

The declared unit is 1 m³ gross storage volume (including packaging). All wall cabinets from nobilia-Werke J. Stickling GmbH & Co. KG are considered declared products.

Declared unit and mass reference

Name	Value	Unit
Declared unit (Gross storage volume)	1	m^3
Mass reference (Gross storage volume)	140.52	kg/m^3
conversion factor (for 1 kg storage furniture)	0.00712	-
Gross density	140.52	kg/m^3
Gross storage volume per unit	0.1512	m³
conversion factor (for a quantity of 1)	0.1512	

The wall cabinet selected as representative is the best-selling wall cabinet with a sales share of 10.52 %.
The weight/volume deviates by -1.17 % from the average of all wall cabinets with an annual quantity of > 100. Due to the high quantity, the low deviation from the average of all wall cabinets and the classic design, this wall cabinet is considered representative.

Chipboard and MDF boards make up the main part of the weight of a wall cabinet. The weight is roughly proportional to the volume, so it is possible to scale the declared unit by scaling the mass reference.

3.2 System boundary

This EPD is a cradle-to-gate analysis - with options (A4 and A5), Modules C1-C4 and Module D (A1-A3 + A4 + A5 + C + D).

A1 - A3, Production phase:
Modules A1 to A3 cover the manufacture of the respective cabinets, as described in Chapter 2.6. The data relating to the components required for this and their transport to the cabinet manufacturing site are taken from a parts list provided. The production process generates 20 % waste from the panel material used. This waste is used to generate heat for buildings outside the system boundary. The thermal utilisation of this waste is modelled in Modules A1–A3. The credits are allocated to Module D. A small proportion of the electricity required for production, as detailed in chapter 3.3, comes from the company's own solar power generation. Combined with the remaining energy mix for Germany, this results in a GWP total for the electricity mix used of 0.81 kg CO_2 equivalent/kWh.

A4, Transport to the customer:
Module A4 covers the transport of the packaged wall cabinet to the customer. The average distance for all European deliveries for the year 2024 was used for this purpose.

A5, Installation:
Module A5 describes the installation of the wall cabinet at the customer's premises. No additional energy is required for installation. Due to the small quantity, any energy consumption for a cordless drill is negligible. Module A5 also covers the waste treatment of the packaging material. This includes transport to the waste treatment facility and thermal recycling. The average distance to the waste incineration plant is assumed to be 50 km.

C1, Demolition:
As with installation, no impacts are considered for removing the wall cabinet from the building.

C2, Transport to waste treatment:
Module C2 describes transport to waste treatment. For this study, the disposal of waste via the bulky waste collection service, with a collection rate of 100 % is used as the state of the art. The average distance to the waste treatment plant is assumed to be 50 km.

C3, Waste treatment:
Module C3 describes waste treatment. In this study, the product leaves the system in Module C3 as a secondary fuel. For this purpose, the processing into a secondary fuel is modelled in this module. A dataset on wood chipping is used for this purpose. Furthermore, in Module C3, in accordance with *EN 16485*, the CO_2 equivalents of the wood-inherent carbon contained in the product, as well as the renewable and non-renewable primary energy (PERM and PENRM) contained in the product, are leaving the product system.

C4, Landfill:
Landfill in Module C4 is not considered in this study. In accordance with regulatory requirements, no waste wood is sent to landfill. At End-of-Life, the main part of the product becomes waste wood which must not be sent to landfill but must instead be recycled or used as fuel (waste wood considered as secondary fuel in this study).

D, Advantages and drawbacks outside the system boundary:
The module includes credits from waste treatment of the packaging material from the Module A5. These are considered as thermal and electric energy. Additionally, this module considers the burdens and credits associated with the use of secondary fuel as described in Module C3.
Furthermore, the credits from the thermal recovery of the offcuts in Modules A1–A3 are modelled here. These are modelled for heat generation only, with an efficiency of 90 %.
The steel components cannot be recycled as a single material stream via the selected disposal route. For the sake of completeness, the burdens of the waste treatment of the steel components are modelled using a data set that describes the waste treatment of steel components via waste incineration. Any resulting credits in the form of primary steel saved are not taken into account.

During use, the wall cabinet does not consume any energy or water and has no impact on the environment. Consequently, Modules B1–B7 are not declared.

3.3 Estimates and assumptions
Only the total electricity demand is available for the entire plant. The electricity consumption for a wall cabinet was determined by calculating a fixed electricity consumption per cabinet produced and a variable electricity consumption per weight of the cabinet produced. For the environmental impact, the use of green electricity was calculated taking into account the residual electricity mix for the remaining electricity. The proportion of the electricity demand covered by green electricity in the total electricity demand is 1,3 %.

A brass casting process was used to manufacture the handle, which consists of a zinc-aluminium-magnesium alloy. Due to the higher melting temperature required in the data set used, this is classified as a conservative assumption.

For modelling the manufacture of steel components produced in the upstream chain, 63 % of the data set is used for primary steel and 37 % for secondary steel. This corresponds to the average technology level in the European market in 2024.

Some steel components are transported from the manufacturer to the cabinet manufacturer by electric truck. However, due to the limited data available on electric trucks, this is modelled as a conservative assumption using a diesel truck.

3.4 Cut-off criteria
The overlapping part of the edge banding is cut off after application. The resulting waste quantity is very small and is disregarded due to a lack of data in this regard.

Due to poor data availability and the chosen system boundary, the infrastructure required for the production of the cabinets, the necessary auxiliary materials and lubricants, and the replacement of tools are excluded.

The packaging of the delivered preliminary products and materials is also neglected. The quantities are minimal, but no detailed data is available in this regard.

The rules from *PCR Part A*: 'Calculation Rules for the Life Cycle Assessment and Requirements for the Project Report' were complied with accordingly.

3.5 Background data
The manufacturer has provided a list of the required components, materials, weights and delivery distances.

The upstream chains of the respective input materials are mapped using generic data sets from the ecoinvent database v.3.11. The assignment was made in accordance with the rules in the respective data set documentation.

German data sets were used for production wherever possible.

3.6 Data quality
The data collection followed the principles described in *ISO 14044*.

The data quality of the primary data is rated as very good. The list of materials for all materials and components is generated automatically in accordance with the order placed.

The quality of the background data used is considered to be good. When selecting the background data, attention was paid to the technological, geographical and time-related representativeness of the data basis.

Due to various issues relating to the databases and calculations used, no published EPD was utilised for chipboard production. Following a comparison of the results with published EPDs, the results of the modelling used in this EPD are deemed plausible.

3.7 Period under review
The data for the life cycle assessment are collected for the reporting period in 2024.

3.8 Geographic representativeness

Country or region in which the declared product system is manufactured, used or handled at the end of the product's life span: Europe

3.9 Allocation

The material-inherent properties of the product (biogenic carbon and the primary energy it contains) are allocated according to the physical criterion of mass.

Production

In addition to wall cabinets, other types of cabinets are also produced in the plant under consideration. This was assigned accordingly when allocating electricity consumption, as described in section 3.3.
30 % waste wood is used in the manufacture of chipboard. Due to a lack of data, the values from the background database are used for the manufacture of cardboard as a packaging material and for the manufacture of MDF boards, with a secondary material content of approximately 99 % for the cardboard and approximately 1 % for the MDF board.
The heating value of this secondary material is not taken into account in the calculation of the PERM and PENRM for the Modules A1-A3 and C3.

Waste treatment

The waste treatment of the packaging material remaining after installation of the product is considered in Module A5. The burdens are assigned to Module A5, and the resulting credits to Module D.
Module C3 includes the further processing of the product into a secondary fuel. In this process, all of the product's material, including the waste wood used, leaves the system in this module under the indicator 'materials for energy recovery'.

Module D models the burdens and credits associated with the use of the secondary fuel. In this module, the energy contained in the secondary fuel is listed as 'use of renewable/non-renewable secondary fuels', based on its heating value.

3.10 Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all data sets to be compared were created according to *EN 15804* and the building context and product-specific performance characteristics are taken into account. Data sets from ecoinvent v.3.11 were used for modelling.

4. LCA: Scenarios and additional technical information

Characteristic product properties of biogenic carbon

The biogenic carbon from the wood of chipboard, MDF boards and wooden dowels and in the product packaging (cardboard) was taken into account in A1–A3 as an inclusion and booked out again as part of disposal (A5 packaging or C3 product).1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Information on describing the biogenic carbon content at factory gate

Name	Value	Unit
Biogenic carbon content in product	52.72	kg C
Biogenic carbon content in accompanying packaging	1.43	kg C

Note: 1 kg of biogenic carbon is equivalent to 44/12 kg of CO_2.

Transport from the gate to the site (A4)

The data in the following table corresponds to the average data for delivery in 2024. Delivery is made by a diesel-powered, Euro 6 truck with a payload of < 32 t.

Name	Value	Unit
Transport distance	597	km
Capacity utilisation (including empty runs)	50	%

Assembly (A5)

The end of the life cycle of the packaging materials is modelled using the waste analysis in Module A5. The following table shows the quantity of packaging material.

Name	Value	Unit
Output substances following waste treatment on site	3.61	kg

End of life (C1-C4)

For the end-of-life scenario, the disposal route via bulky waste is selected, with a collection rate of 100 %. In Module C3, all the material is processed into secondary fuel.

Name	Value	Unit
Energy recovery	134.26	kg

Reuse, recovery and/or recycling potentials (D), relevant scenario information

Module D models the burning of the secondary fuel and the resulting credits. It also includes the credits from the thermal waste treatment of the packaging material from Module A5. The utilisation rate used is 11.36 % for electricity and 29.34 % for heat. The values shown in the table for 'use of secondary fuels' refer to the heating values of the materials that have been processed into secondary fuel.

The calculation results in the following energy quantities:

Name	Value	Unit
Energy recovery elec. from A5	5.62	MJ
Energy recovery therm. from A5	14.18	MJ
Use of renewable secondary fuels from C3	2030.89	MJ (LHV)
Use of non-renewable secondary fuels from C3	323.60	MJ (LHV)

Net flow volume steel:

In Modules A1–A3, the wall cabinet has an input of 5.00 kg of steel, of which 1.85 kg is used as secondary material. This results in a net quantity of 3.15 kg for Module D.

5. LCA: Results

The results of the life cycle assessment for the product in question (1 m³ gross storage volume) are presented below. The characterisation factors according to *EN 15804*, EF 3.1 are used for the calculations.

DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; MND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)

Product stage			Construction process stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw material supply	Transport	Manufacturing	Transport from the gate to the site	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MNR	MNR	MNR	MND	MND	X	X	X	X	X

RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m³ gross storage volume

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq	-1.16E+01	8.81E+00	5.73E+00	0	7.15E-01	1.86E+02	0	-1.02E+02
GWP-fossil	kg CO_2 eq	1.78E+02	8.81E+00	5.03E-01	0	7.15E-01	9.8E-01	0	-6.99E+01
GWP-biogenic	kg CO_2 eq	-1.9E+02	0	5.23E+00	0	0	1.85E+02	0	-3.17E+01
GWP-luluc	kg CO_2 eq	3.03E-01	3.29E-03	2.61E-05	0	2.66E-04	2.79E-03	0	-1.02E-02
ODP	kg CFC11 eq	6.94E-06	2E-07	1.64E-09	0	1.62E-08	1.58E-08	0	-3.49E-06
AP	mol H^+ eq	8.41E-01	2.14E-02	9.94E-04	0	1.74E-03	4.82E-03	0	-1.94E-01
EP-freshwater	kg P eq	6.59E-02	6.44E-04	1.42E-05	0	5.22E-05	8.75E-04	0	-3.38E-02
EP-marine	kg N eq	2.1E-01	5.63E-03	5.32E-04	0	4.57E-04	8.71E-04	0	-4.77E-02
EP-terrestrial	mol N eq	2.5E+00	6.1E-02	4.6E-03	0	4.94E-03	7.59E-03	0	-4.92E-01
POCP	kg NMVOC eq	8.36E-01	3.58E-02	1.19E-03	0	2.91E-03	2.45E-03	0	-1.94E-01
ADPE	kg Sb eq	3.35E-03	2.56E-05	2.34E-07	0	2.08E-06	2.33E-06	0	-7.11E-05
ADPF	MJ	2.97E+03	1.34E+02	9.52E-01	0	1.08E+01	2.22E+01	0	-1.74E+03
WDP	m^3 world eq deprived	1.2E+02	7.58E-01	1.75E-01	0	6.15E-02	5.13E-01	0	-3.93E+00

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m³ gross storage volume

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PERE	MJ	1.17E+03	1.83E+00	6.54E-01	0	1.49E-01	4.72E+00	0	-7.66E+00
PERM	MJ	1.48E+03	0	-6.15E-01	0	0	-1.48E+03	0	0
PERT	MJ	2.65E+03	1.83E+00	3.95E-02	0	1.49E-01	-1.48E+03	0	-7.66E+00
PENRE	MJ	3.01E+03	1.34E+02	5.33E+00	0	1.08E+01	2.22E+01	0	-1.74E+03
PENRM	MJ	2.59E+02	0	-4.38E+00	0	0	-2.55E+02	0	0
PENRT	MJ	3.27E+03	1.34E+02	9.52E-01	0	1.08E+01	-2.33E+02	0	-1.74E+03
SM	kg	4.08E+01	0	0	0	0	0	0	-4.38E-02
RSF	MJ	0	0	0	0	0	0	0	2.03E+03
NRSF	MJ	0	0	0	0	0	0	0	3.24E+02
FW	m^3	2.84E+00	1.86E-02	4.09E-03	0	1.51E-03	1.39E-02	0	-9.5E-02

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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m³ gross storage volume

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HWD	kg	1.4E+01	1.95E-01	5.02E-02	0	1.58E-02	6.38E-02	0	-5.17E+00
NHWD	kg	4.68E+02	3.98E+00	3.96E+00	0	3.22E-01	4.42E+00	0	-2.94E+01
RWD	kg	3.84E-03	3.68E-05	7.44E-07	0	2.98E-06	1.57E-04	0	-6.44E-04
CRU	kg	0	0	0	0	0	0	0	0
MFR	kg	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	1.34E+02	0	0
EEE	MJ	0	0	5.62E+00	0	0	0	0	0
EET	MJ	4.09E+02	0	1.42E+01	0	0	0	0	0

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m³ gross storage volume

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1.27E-05	8.74E-07	9.17E-09	0	7.09E-08	2.16E-08	0	-6.06E-07
IR	kBq U235 eq	1.47E+01	1.5E-01	2.93E-03	0	1.21E-02	6.13E-01	0	-2.25E+00
ETP-fw	CTUe	1.34E+03	1.57E+01	6.66E+00	0	1.27E+00	2.36E+00	0	-3.06E+00
HTP-c	CTUh	8.55E-07	1.47E-09	2.03E-10	0	1.19E-10	2.16E-10	0	-7.23E-09
HTP-nc	CTUh	2.08E-06	8.59E-08	8.7E-09	0	6.97E-09	7.85E-09	0	-1.08E-07
SQP	SQP	5.89E+03	1.34E+02	4.55E-01	0	1.09E+01	3.32E+00	0	-8.34E+01

PM = Potential incidence of disease due to PM emissions; IR = Potential human exposure efficiency relative to U235; ETP-fw = Potential comparative toxic unit for ecosystems; HTP-c = Potential comparative toxic unit for humans (carcinogenic); HTP-nc = Potential comparative toxic unit for humans (not carcinogenic); SQP = Potential soil quality index

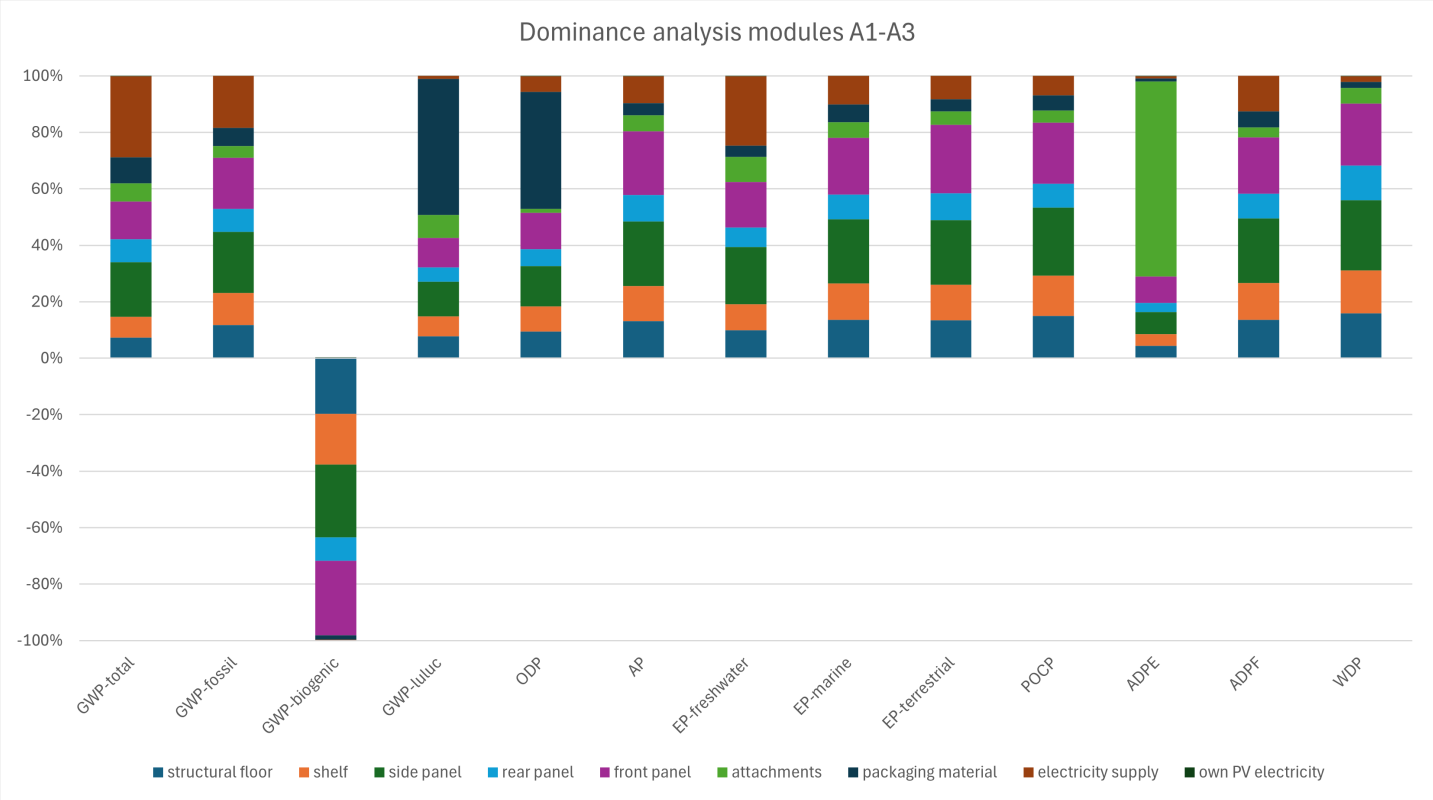
Disclaimer 1 – for the indicator “Potential human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – carcinogenic”, “Potential comparative toxic unit for humans - not carcinogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

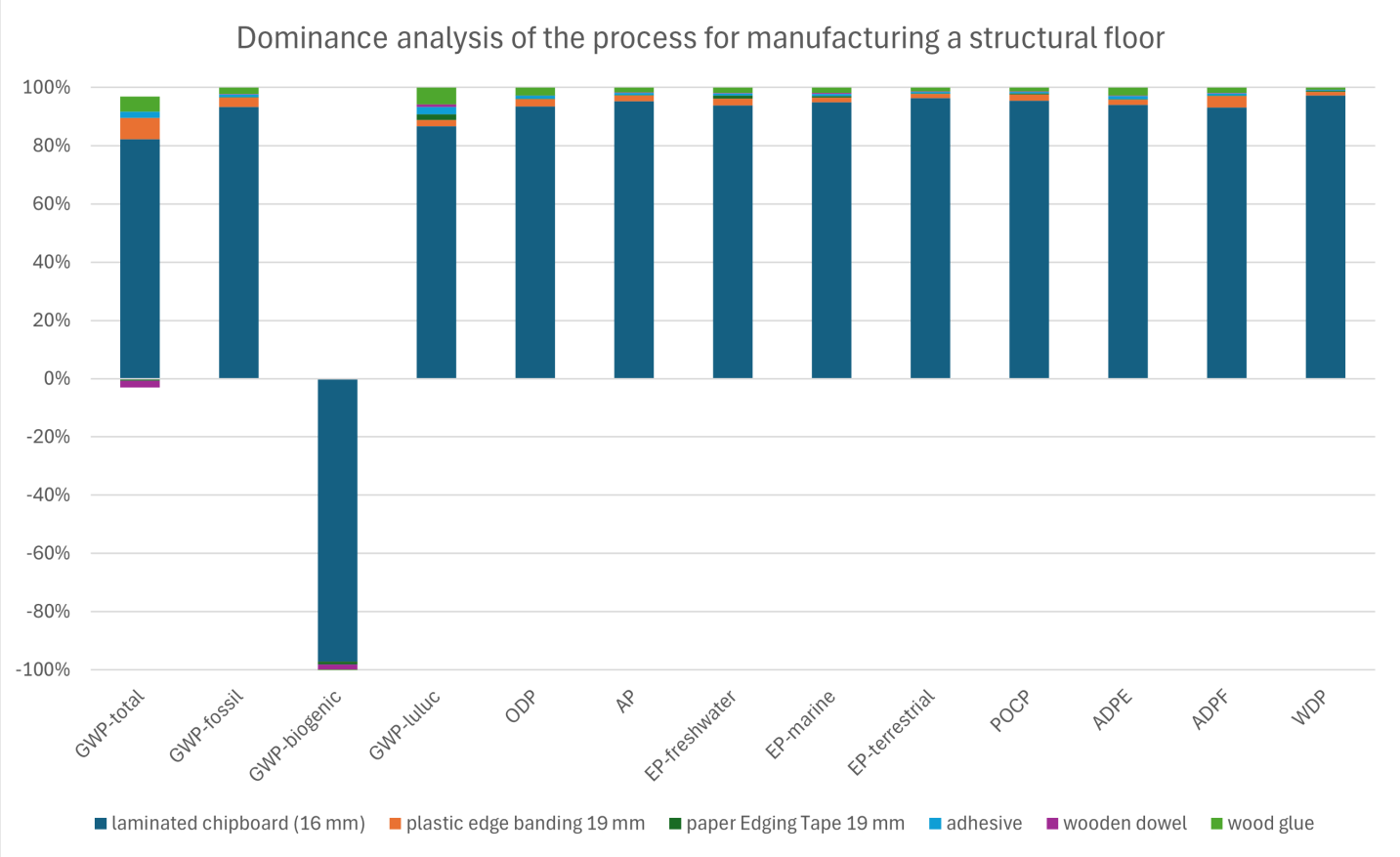
6. LCA: Interpretation

An analysis of the results shows that Modules A1-A3, with a share of over 94 % in the 11 core indicators (excluding GWP-total and GWP-biogenic, as a comparison with the overall result is not possible due to negative values), is the dominant module in the entire life cycle.

The figure with the dominance analysis of Modules A1-A3 shows that for most indicators, the processes involved in manufacturing the individual components of the wall cabinet – the 'side panel', 'front panel', 'structural floor', 'rear panel' and 'shelf' – dominate, accounting for a total share of between 60 % and 95 %. Electricity consumption from the grid accounts for just under 20 % of the 'GWP-total' and 'EP-freshwater' indicators. The manufacture of packaging material accounts for a large share of approximately 50 % for the 'GWP-luluc' and 'ODP' indicators. The process for manufacturing the attachments dominates the 'ADPE' indicator. This can be explained by the fact that the majority of the steel components are manufactured there.



The dominance analysis of the process for manufacturing a structural floor, which is considered an exemplary component, shows that the manufacture of a coated chipboard panel, accounting for over 80 % of the respective indicators, is the dominant part of the manufacture of a wall cabinet.



7. Requisite evidence

The following table shows the results of an emissions measurement carried out by the accredited laboratory 'eco-INSTITUT Germany GmbH'.

The measurement was carried out using two base cabinets of the model 'USG100-M'. These are each 1000 mm wide, 864 mm high and 561 mm deep, making them significantly larger than an average wall cabinet. In addition, a worktop with a width of 1000 mm, a cutlery tray and an anti-slip mat were tested for each base cabinet.
The structure of a base cabinet is very similar to that of a wall cabinet. As the cabinets used for the emission test are significantly heavier than a wall cabinet and additional components were also tested, this test is considered a worst-case scenario for the wall cabinet product family as well.

The emissions test was carried out in accordance with standards *ISO 16000-3, ISO 16000-6, ISO 16000-9* and *EN 16516*.

Name	Value	Unit
Total VOC (C6 – C16), in accordance with DIN EN 16516	8	µg/m³
Total SVOC (C16 – C22), in accordance with DIN EN 16516	< 5	µg/m³
R-value (dimensionless), according to AgBB 2024	0.07	-
Total VOC without NIK, according to AgBB 2024	< 5	µg/m³
CMR 1 substances	< 1	µg/m³
Formaldehyde	5	µg/m³

Formaldehyde emissions were measured according to *EN 16516* with a load factor of 1.0 m²/m³ and an air exchange rate of 1 1/h instead of *EN 717-1*. Due to the selected load factor and air exchange rate, the measurement results are comparable with those according to *EN 717-1*.

8. References

DIN 68930
DIN 68930:2025-07, Kitchen furniture and bathroom furniture - Fitness for purpose - Requirements and testing

EN 717-1
DIN EN 717-1:2005-01, Wood-based panels - Determination of formaldehyde release - Part 1: Formaldehyde emission by the chamber method

EN 13986
DIN EN 13986:2015-06, Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking

EN 14749
DIN EN 14749:2022-07, Furniture - Domestic and kitchen storage units and kitchen-worktops - Safety requirements and test methods

EN 15804
DIN EN 15804+A2+AC:2022-03, Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

EN 16485
DIN EN 16485:2014-07, Round and sawn timber - Environmental Product Declarations - Product category rules for wood and wood-based products for use in construction

EN 16516
DIN EN 16516:2020-10, Construction products: Assessment of release of dangerous substances - Determination of emissions into indoor air

ISO 9001
DIN EN ISO 9001:2015-11, Quality management systems - Requirements (ISO 9001:2015)

ISO 14001
DIN EN ISO 14001:2015-11, Environmental management systems - Requirements with guidance for use (ISO 14001:2015)

ISO 14025
DIN EN ISO 14025:2011-10, Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14040
DIN EN ISO 14040:2021-02, Environmental management - Lifecycle assessment - Principles and framework (ISO 14040:2006+ Amd 1:2020).

ISO 14044
DIN EN ISO 14044:2021-02, Environmental management - Lifecycle assessment - Requirements and guidelines (ISO14044:2006 + Amd 1:2017 + Amd 2:2020).

ISO 16000-3
DIN ISO 16000-3:2023-12, Indoor air - Part 3: Determination of formaldehyde and other carbonyl compounds in indoor and test chamber air - Active sampling method (ISO 16000-3:2022)

ISO 16000-6
DIN ISO 16000-6:2022-03, Indoor air - Part 6: Determination of organic compounds (VVOC, VOC, SVOC) in indoor and test chamber air by active sampling on sorbent tubes, thermal desorption and gas chromatography using MS or MS FID (ISO 16000-6:2021)

ISO 16000-9
DIN EN ISO 16000-9:2024-08, Indoor air - Part 9: Determination of the emission of volatile organic compounds from samples of building products and furnishing - Emission test chamber method (ISO 16000-9:2024)

Further sources

ecoinvent
ecoinvent 3.11 Database for life cycle assessment (input-output data). Swiss Centre for Life Cycle Inventories, St.Gallen.

EWC
European Waste Catalog

ECHA Candidate List
List of substances of very high concern for authorisation (published in accordance with Article 59 (10) of the REACH Regulation).

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PCR Part A
Product category rules for building-related products and services - Part A: Calculation rules for the life cycle assessment and requirements for the project report according to EN15804+A2:2019, Version 1.4, dated 23/01/2025.

PCR Part B: Domestic storage furniture
PCR guidance texts for building-related products and services - Part B: Requirements for the EPD for domestic storage furniture, Version 12, dated 03/05/2026.

Regulation (EU) No. 305/2011 (CPR)
Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC Text with EEA relevance.

Regulation (EU) No. 528/2012
Regulation (EU) No 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products Text with EEA relevance

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