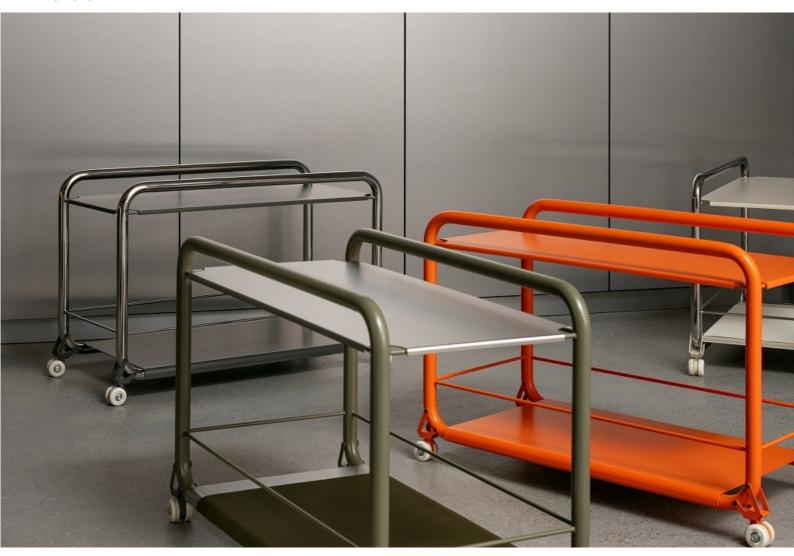




# Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

# Tension



# **LAMMHULTS**

Owner of the declaration:

Lammhults Möbel AB

**Product:** 

Tension

**Declared unit:** 

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core

PCR

NPCR 026:2022 Part B for Furniture

Program operator:

The Norwegian EPD Foundation

**Declaration number:** 

NEPD-6960-6346-EN

Registration number: NEPD-6960-6346-EN

Issue date: 24.06.2024

Valid to: 24.06.2029

**EPD** software:

LCAno EPD generator ID: 393959

The Norwegian EPD Foundation

#### **General information**

#### **Product**

Tension

# Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway

Phone: +47 977 22 020 web: www.epd-norge.no

#### **Declaration number:**

NEPD-6960-6346-EN

#### This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR NPCR 026:2022 Part B for Furniture

#### Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

#### **Declared unit:**

1 pcs Tension

#### Declared unit (cradle to gate) with option:

A1-A3,A4,A5,B2,B3,B4,C1,C2,C3,C4,D

#### Functional unit:

Tension trolley with powder coated frame and shelves.

#### General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

#### **Verification of EPD tool:**

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Elisabet Amat, GREENIZE projects

(no signature required)

#### Owner of the declaration:

Lammhults Möbel AB Contact person: Helena Kumlin Phone: +46 472 26 95 00 e-mail: Helena.kumlin@lammhults.se

#### Manufacturer:

Lammhults Möbel AB

#### Place of production:

Lammhults Möbel AB Växjövägen 41 SE-363 45 Lammhult, Sweden

#### Management system:

ISO 14001, 9001, 45001

#### Organisation no:

556058-2602

#### Issue date:

24.06.2024

#### Valid to:

24.06.2029

#### Year of study:

2023

# Comparability:

EPD of construction products may not be comparable if they not comply with EN 15804 and seen in a building context.

# **Development and verification of EPD:**

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system, and has been approved by EPD Norway.

Developer of EPD: Lovisa Aiff

Reviewer of company-specific input data and EPD: Alexandra Lidnert

#### **Approved:**

Håkon Hauan

Managing Director of EPD-Norway

#### **Product**

#### **Product description:**

Tension, designed by Gustav Winsth, is inspired by both the sleek minimalism of today's personal devices and Lammhults' bold S70 series from the late 60s. Featuring a sturdy steel tube frame and ultra-slim shelves, the trolley is a practical addition to any interior — whether used for display, storage or hospitality. With a pared-back welded construction and a broad spectrum of pop colours or sophisticated neutrals to choose from, Tension is a mobile side table — an expression of freedom, even when confined to a quiet corner.

#### **Product specification**

Powder coated frame in Ø32 mm steel tubing. Caster suspension in 2mm powder coated steel sheet. Caster bracket in die-cast zinc, powder-coated. Casters in softened PE, white RAL9010 with black Lammhults logo. Two shelves of 2mm powder coated or stainless steel sheet. Matching piqué leather cover on the lower shelf at additional cost.

Materials	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Metal - Steel	21,63	96,48	0,00	0,00
Metall	0,46	2,07	0,00	0,00
Plastic - Polyethylene (LDPE)	0,24	1,07	0,00	0,00
Plastic - Polyurethane (PUR)	0,01	0,03	0,00	0,00
Powder coating	0,06	0,27	0,00	0,00
Textile - Polyester (PE)	0,02	0,09	0,00	0,00
Total	22,42	100,00	0,00	

Packaging	kg	%	Recycled share in material (kg)	Recycled share in material (%)
Packaging - Cardboard	0,90	27,62	0,00	0,00
Packaging - Plastic	0,21	6,38	0,00	0,00
Packaging - Plastic straps	0,05	1,53	0,00	0,00
Recycled cardboard	2,10	64,46	2,10	100,00
Total incl. packaging	25,68	100,00	2,10	

#### **Technical data:**

Height 61cm Width 95cm

Depth 45cm

Tension meets the requirements of EN 1021-1, 16121:2024 level 1 and Möbelfakta.

#### Market

Available world wide.

## Reference service life, product

15 years (warranty 5 years)

Reference service life, building

#### LCA: Calculation rules

#### **Declared unit:**

1 pcs Tension

#### **Cut-off criteria:**

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

#### Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

#### Data quality:

# **LAMMHULTS**

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

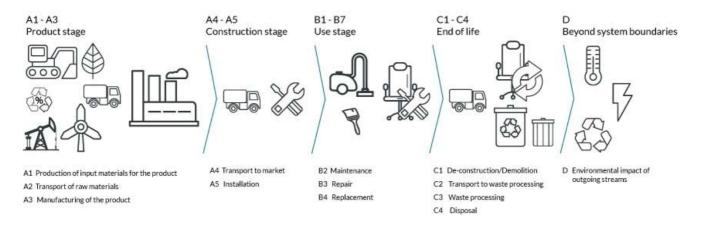
Materials	Source	Data quality	Year
Metal - Steel	ecoinvent 3.6	Database	2019
Metall	ecoinvent 3.6	Database	2019
Packaging - Cardboard	Modified ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Packaging - Plastic straps	ecoinvent 3.6	Database	2019
Plastic - Polyethylene (LDPE)	ecoinvent 3.6	Database	2019
Plastic - Polyurethane (PUR)	ecoinvent 3.6	Database	2019
Powder coating	Ecoinvent 3.6	Database	2019
Recycled cardboard	Modified ecoinvent 3.6	Database	2019
Textile - Polyester (PE)	ecoinvent 3.6	Database	2019

## System boundaries (X=included, MND=module not declared, MNR=module not relevant)

	Pı	roduct stag	ge		uction ion stage				End of life stage			Beyond the system boundaries					
Raw	materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refu <i>r</i> b ishment	Operational energy use	Operational water use	De- construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
Α	.1	A2	A3	A4	A5	B1	B2	В3	B4	B5	В6	В7	C1	C2	C3	C4	D
X	<	Х	X	X	Χ	MND	Χ	Χ	Х	MND	MND	MND	X	Χ	Χ	Χ	X

#### System boundary:

The analysis is a cradle-to-cradle, A1-D, where some B-stages that were assumed to be neglectable are not included. The A1-A4 stages includes the extraction and production of raw materials, transportation to the production site, the production process itself, and an estimated transport distance to the market. A5 includes the generated waste from the packaging of the product after the assembly at the customer. The only B-stage that is assumed to be relevant is B2, which includes assumptions on how the customer takes care of the product according to Lammhults' care instructions. The C- and D-stages includes the use of materials and energy for deconstruction, the transport to waste management, the waste processes, disposal of materials that cannot be processed, and the potential of reuse, recovery, and recycling of the product.



#### Additional technical information:

https://www.lammhults.se/products/tables-trolleys/tension

 $Lammhults\ Care\ \&\ Maintenance:\ https://issuu.com/lammhults/docs/lammhultscaremaintenance 2205$ 

#### LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.

Some assumptions have been made regarding the products lifetime after leaving the factory gates. The product is assumed to be transported to the capitol of each country sold/delivered to. An average distance (A4) to the customer has been calculated through this data. In the A5 phase, the packaging of the product becomes waste, and the impacts are added automatically according to assumptions made in the EPD tool on waste handling on-site. In the use stage, the assumption is that the customer takes care of the product by cleaning the product with water and window cleaner. For the end-of-life stage of the product, it has been assumed that there is a 50 km distance from the customer to a waste terminal. The rest of the values are automatically filled in by the tool. For the D-stage, automatic values are filled in, according to generic data.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (km)	36,7 %	548	0,043	l/tkm	23,56
Assembly (A5)	Unit	Value			
Waste, packaging, cardboard, 100 % recycled, to average treatment (kg)	kg	2,10			
Waste, packaging, corrugated board box, 0 % recycled, to average treatment (kg)	kg	0,90			
Waste, packaging, PET straps, to average treatment - A5 (kg)	kg	0,05			
Waste, packaging, plastic film (LDPE), to average treatment - A5 (kg)	kg	0,21			
Maintenance (B2)	Unit	Value			
Household detergent, 5% soap solution (kg)	kg/DU	0,00			
Wastewater, average treatment (m3)	m3	0,00			
Water, tap water (m3)	m3/DU	0,00			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 6 (km)	53,3 %	50	0,023	l/tkm	1,15
Waste processing (C3)	Unit	Value			
Waste treatment per kg Non-hazardous waste, incineration with fly ash extraction - C3 (kg)	kg	0,52			
Waste treatment per kg Polyethylene, PE, incineration with fly ash extraction - C3 (kg)	kg	0,24			
Waste treatment per kg Polyurethane (PU), incineration (kg)	kg	0,01			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg)	kg	21,63			
Waste treatment per kg Textile, incineration with fly ash extraction (kg)	kg	0,02			
Waste, materials to recycling (kg)	kg	7,34			
Disposal (C4)	Unit	Value			
Landfilling of ashes and residues from incineration of Scrap steel (kg)	kg	14,29			
Landfilling of ashes from incineration of Non- hazardous waste, process per kg ashes and residues - C4 (kg)	kg	0,12			
Landfilling of ashes from incineration of Polyethylene, PE, process per kg ashes and residues - C4 (kg)	kg	0,01			
Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg)	kg	0,00			
Landfilling of ashes from incineration of Textile, soiled, process per kg ashes and residues (kg)	kg	0,00			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	0,80			
Substitution of primary steel with net scrap (kg)	kg	7,33			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	12,15			

**LCA: Results** 

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environme	ental impact							
	Indicator	Uni	i .	A1-A3	A4	A5	B2	В3
	GWP-total	kg CO <sub>2</sub>	-eq	1,03E+02	2,30E+00	5,16E+00	6,33E-04	0
	GWP-fossil	kg CO <sub>2</sub>	kg CO <sub>2</sub> -eq		2,30E+00	6,90E-02	4,54E-04	0
	GWP-biogenic	kg CO <sub>2</sub>	-eq	-7,32E-01	9,51E-04	5,09E+00	2,31E-05	0
	GWP-luluc	kg CO <sub>2</sub>	-eq	2,78E-01	8,18E-04	1,76E-05	1,56E-04	0
Ö	ODP	kg CFC1	1 -eq	8,27E-06	5,21E-07	1,15E-08	4,90E-11	0
	АР	mol H+	-eq	5,35E-01	6,61E-03	2,55E-04	3,31E-06	0
	EP-FreshWater	kg P -	eq	6,76E-03	1,84E-05	4,41E-07	8,26E-07	0
	EP-Marine	kg N -	eq	1,15E-01	1,31E-03	9,91E-05	1,65E-06	0
-	EP-Terrestial	mol N	-eq	1,24E+00	1,46E-02	9,13E-04	8,09E-06	0
	POCP	kg NMVC	C -eq	4,50E-01	5,60E-03	2,66E-04	1,91E-06	0
	ADP-minerals&metals <sup>1</sup>	kg Sb-	eq	3,86E-02	6,35E-05	1,29E-06	1,64E-08	0
	ADP-fossil <sup>1</sup>	MJ		1,44E+03	3,48E+01	7,63E-01	7,06E-03	0
<u>%</u>	WDP <sup>1</sup>	m <sup>3</sup>		2,80E+04	3,36E+01	1,16E+00	1,07E-01	0
	Indicator	Unit	B4	C1	C2	C3	C4	D
	GWP-total	kg CO <sub>2</sub> -eq	0	0	1,12E-01	2,10E+00	1,54E-01	-8,14E+00
	GWP-fossil	kg CO <sub>2</sub> -eq	0	0	1,12E-01	2,07E+00	1,54E-01	-8,13E+00
	GWP-biogenic	kg CO <sub>2</sub> -eq	0	0	4,79E-05	3,14E-02	1,17E-04	-4,59E-03
	GWP-luluc	kg CO <sub>2</sub> -eq	0	0	3,41E-05	5,10E-05	4,75E-05	-6,04E-03
Ö	ODP	kg CFC11 -eq	0	0	2,70E-08	1,85E-08	4,91E-08	-5,13E-03
Œ	АР	mol H+ -eq	0	0	3,60E-04	1,03E-03	1,11E-03	-4,07E-02
<del></del>	EP-FreshWater	kg P -eq	0	0	8,90E-07	4,27E-06	1,51E-06	-5,02E-04
<del></del>	EP-Marine	kg N -eq	0	0	7,89E-05	3,96E-04	3,98E-04	-8,48E-03
<del></del>	EP-Terrestial	mol N -eq	0	0	8,79E-04	4,24E-03	4,41E-03	-8,68E-02
		kg NMVOC -eq	0	0	3,45E-04	1,22E-03	1,27E-03	-4,10E-02
	POCP	kg MWWOC Cq					.,	
	POCP  ADP-minerals&metals <sup>1</sup>	kg Sb-eq	0	0	1,99E-06	1,04E-06	2,75E-06	-1,40E-04
					1,99E-06 1,82E+00			

GWP-total = Global Warming Potential total; 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

#### Remarks to environmental impacts

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Additional e	nvironmental impac	t indicators						
	Indicator	Unit		A1-A3	A4	A5	B2	В3
	PM	Disease incidence		9,94E-06	1,41E-07	3,84E-09	3,60E-11	0
(**)	IRP <sup>2</sup>	kgBq U235 -eq		1,22E+01	1,52E-01	3,29E-03	4,49E-05	0
	ETP-fw <sup>1</sup>	CTUe		4,79E+03	2,58E+01	9,86E-01	1,66E-02	0
44. ***********************************	HTP-c <sup>1</sup>	CTUh		5,52E-07	0,00E+00	2,90E-11	1,00E-12	0
48° B	HTP-nc <sup>1</sup>	CTUh	CTUh		2,81E-08	1,21E-09	2,70E-11	0
	SQP <sup>1</sup>	dimensionless		1,99E+03	2,43E+01	6,03E-01	7,94E-03	0
I	ndicator	Unit	B4	C1	C2	C3	C4	D
	PM	Disease incidence	0	0	1,03E-08	3,88E-08	2,05E-08	-7,04E-07
	IRP <sup>2</sup>	kgBq U235 -eq	0	0	7,94E-03	3,94E-03	1,45E-02	2,25E-02
	ETP-fw <sup>1</sup>	CTUe	0	0	1,33E+00	1,17E+01	2,06E+00	-4,55E+02
44. ×	HTP-c <sup>1</sup>	CTUh	0	0	0,00E+00	1,14E-09	7,20E-11	-3,89E-08
86 B	HTP-nc <sup>1</sup>	CTUh	0	0	1,28E-09	7,84E-09	1,86E-09	8,38E-07

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

2,08E+00

3,09E-01

7,83E+00

-1,18E+01

dimensionless

SQP<sup>1</sup>

<sup>&</sup>quot;Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009"

<sup>\*</sup>INA Indicator Not Assessed

<sup>1.</sup> The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

<sup>2.</sup> 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 nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

# **LAMMHULTS**

Resource use								
	Indicator		Unit	A1-A3	A4	A5	B2	В3
	PERE		MJ	6,88E+02	4,98E-01	1,33E-02	2,28E-03	0
	PERM		MJ	2,66E+01	0,00E+00	-2,66E+01	0,00E+00	0
Ţ,	PERT		MJ	7,14E+02	4,98E-01	-2,66E+01	2,28E-03	0
	PENRE		MJ	1,52E+03	3,48E+01	7,63E-01	7,27E-03	0
.As	PENRM		MJ	2,08E+01	0,00E+00	-9,98E+00	0,00E+00	0
<b>IA</b>	PENRT		МЈ	1,54E+03	3,48E+01	-9,22E+00	7,27E-03	0
	SM		kg	2,10E+00	0,00E+00	0,00E+00	0,00E+00	0
2	RSF		МЈ	4,47E+00	1,78E-02	4,27E-04	6,56E-05	0
	NRSF		MJ		6,36E-02	1,67E-03	6,55E-05	0
<b>%</b>	FW		$m^3$		3,72E-03	3,65E-04	1,02E-03	0
	ndicator	Unit	B4	C1	C2	C3	C4	D
	PERE	MJ	0	0	2,29E-02	7,38E-02	6,47E-02	-1,17E+01
E,	PERM	МЈ	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
÷.	PERT	MJ	0	0	2,29E-02	7,38E-02	6,47E-02	-1,17E+01
TAN								
	PENRE	МЈ	0	0	1,82E+00	1,36E+00	3,62E+00	-6,88E+01
4	PENRE PENRM	MJ	0	0	1,82E+00 0,00E+00	1,36E+00 -1,09E+01		-6,88E+01 0,00E+00
							3,62E+00	
Å	PENRM	МЈ	0	0	0,00E+00	-1,09E+01	3,62E+00 0,00E+00	0,00E+00
.Îc	PENRM PENRT	MJ	0	0	0,00E+00 1,82E+00	-1,09E+01 -9,50E+00	3,62E+00 0,00E+00 3,62E+00	0,00E+00 -6,88E+01
	PENRM PENRT SM	MJ MJ kg	0 0 0	0 0	0,00E+00 1,82E+00 0,00E+00	-1,09E+01 -9,50E+00 0,00E+00	3,62E+00 0,00E+00 3,62E+00 0,00E+00	0,00E+00 -6,88E+01 0,00E+00

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 resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; PENRM = Use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

# **LAMMHULTS**

End of life - Waste									
	Indicator		Uı	nit	A1-A3	A4	A5	B2	В3
	HWD	HWD		kg		1,79E-03	0,00E+00	1,72E-05	0
Ō	NHWD		k	g	3,32E+01	1,69E+00	3,26E+00	1,18E-04	0
- -	RWD		kg		7,71E-03	2,37E-04	0,00E+00	3,91E-08	0
In	dicator		Unit	B4	C1	C2	C3	C4	D
Ā	HWD		kg	0	0	9,94E-05	0,00E+00	1,43E+01	-4,20E-02
Ū	NHWD		kg	0	0	1,58E-01	5,24E-01	1,01E-01	-3,32E+00
<b>3</b>	RWD		kg	0	0	1,24E-05	0,00E+00	2,24E-05	1,70E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

End of life - Output flow								
Ind	icator	Ur	it	A1-A3	A4	A5	B2	В3
<b>®</b>	CRU	k	9	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0
&▷	MFR	kį	9	1,43E+00	0,00E+00	2,92E+00	0,00E+00	0
DF	MER	kį	9	2,12E+00	0,00E+00	1,70E-05	0,00E+00	0
50	EEE	M	J	1,04E+00	0,00E+00	1,72E-01	0,00E+00	0
DB	EET	M	J	1,58E+01	0,00E+00	2,60E+00	0,00E+00	0
Indicato	r	Unit	B4	C1	C2	C3	C4	D
<b>∅&gt;</b>	CRU	kg	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
\$>	MFR	kg	0	0	0,00E+00	7,34E+00	0,00E+00	0,00E+00
DF	MER	kg	0	0	0,00E+00	2,24E+01	0,00E+00	0,00E+00
50	EEE	МЈ	0	0	0,00E+00	1,09E+00	0,00E+00	0,00E+00
DI	EET	MJ	0	0	0,00E+00	1,65E+01	0,00E+00	0,00E+00

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

"Reading example: 9,0 E-03 = 9,0\*10-3 = 0,009" \*INA Indicator Not Assessed

Biogenic Carbon Content									
Unit	At the factory gate								
kg C	0,00E+00								
kg C	1,39E+00								
	kg C								

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO2

# **Additional requirements**

# Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Sweden (kWh)	ecoinvent 3.6	54,94	g CO2-eq/kWh

#### **Dangerous substances**

The product contains no substances given by the REACH Candidate list.

#### **Indoor environment**

# **Additional Environmental Information**

#### **Key Environmental Indicators**

Key environmental indicators	Unit	A1-A3	A4	A1-C4	A1-D
GWPtotal	kg CO <sub>2</sub> -eq	102,74	2,30	112,57	104,43
Total energy consumption	MJ	2217,16	35,34	2260,33	2188,15
Amount of recycled materials	%	4.15			

Additional environmental impact indicators required in NPCR Part A for construction products							
Indicator	Unit	Unit		A4	A5	B2	В3
GWPIOBC	kg CO <sub>2</sub> -eq	kg CO <sub>2</sub> -eq		2,30E+00	6,90E-02	6,32E-04	0
Indicator	Unit	B4	C1	C2	C3	C4	D
GWPIOBC	kg CO <sub>2</sub> -eq	0	0	1,12E-01	1,54E+00	1,55E-01	-1,21E+01

GWP-IOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

#### **Variants and Options**

Key environmental indicators (A1-A3) for variants of this EPD				
Variants	Weight (kg)	GWPtotal (kg CO <sub>2</sub> -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)
Tension with stainless steel shelves	25.68	129 56	2108 37	17.96

Key environmental indicators (A1-A3) for options for this EPD					
Options	Weight (kg)	GWPtotal (kg CO <sub>2</sub> -eq)	Total energy consumption (MJ)	Amount of recycled materials (%)	
Tension leather mat	0.28	4.16	28.63	0.00	

# **Bibliography**

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.

ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.

EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.

ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.

ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.

Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21 Ruud et al., (2023) EPD generator for NPCR026 Part B for Furniture - Background information for EPD generator application and LCA data, LCA.no report number 01.23

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@ and narway	Program operator and publisher	Phone: +47 977 22 020
© epd-norway	The Norwegian EPD Foundation	e-mail: post@epd-norge.no
Global Program Operator	Post Box 5250 Majorstuen, 0303 Oslo, Norway	web: www.epd-norge.no
	Owner of the declaration:	Phone: +46 472 26 95 00
LAMMHULTS	Lammhults Möbel AB	e-mail: Helena.kumlin@lammhults.se
	Växjövägen 41, SE-363 45 Lammhult	web: https://www.lammhults.se/
	Author of the Life Cycle Assessment	Phone: +47 916 50 916
(LCA)	LCA.no AS	e-mail: post@lca.no
.no	Dokka 6A, 1671	web: www.lca.no
	Developer of EPD generator	Phone: +47 916 50 916
(LCA)	LCA.no AS	e-mail: post@lca.no
.no	Dokka 6B,1671 Kråkerøy	web: www.lca.no
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